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# Analyses of commercial fertilizers and Paris Green

William Carter Stubbs

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BULLETIN

OF THE

Agricultural Experiment Station

OF THE

Louisiana State University and A. & M. College.

W. C. STUBBS, PH. D., Director and State Chemist.

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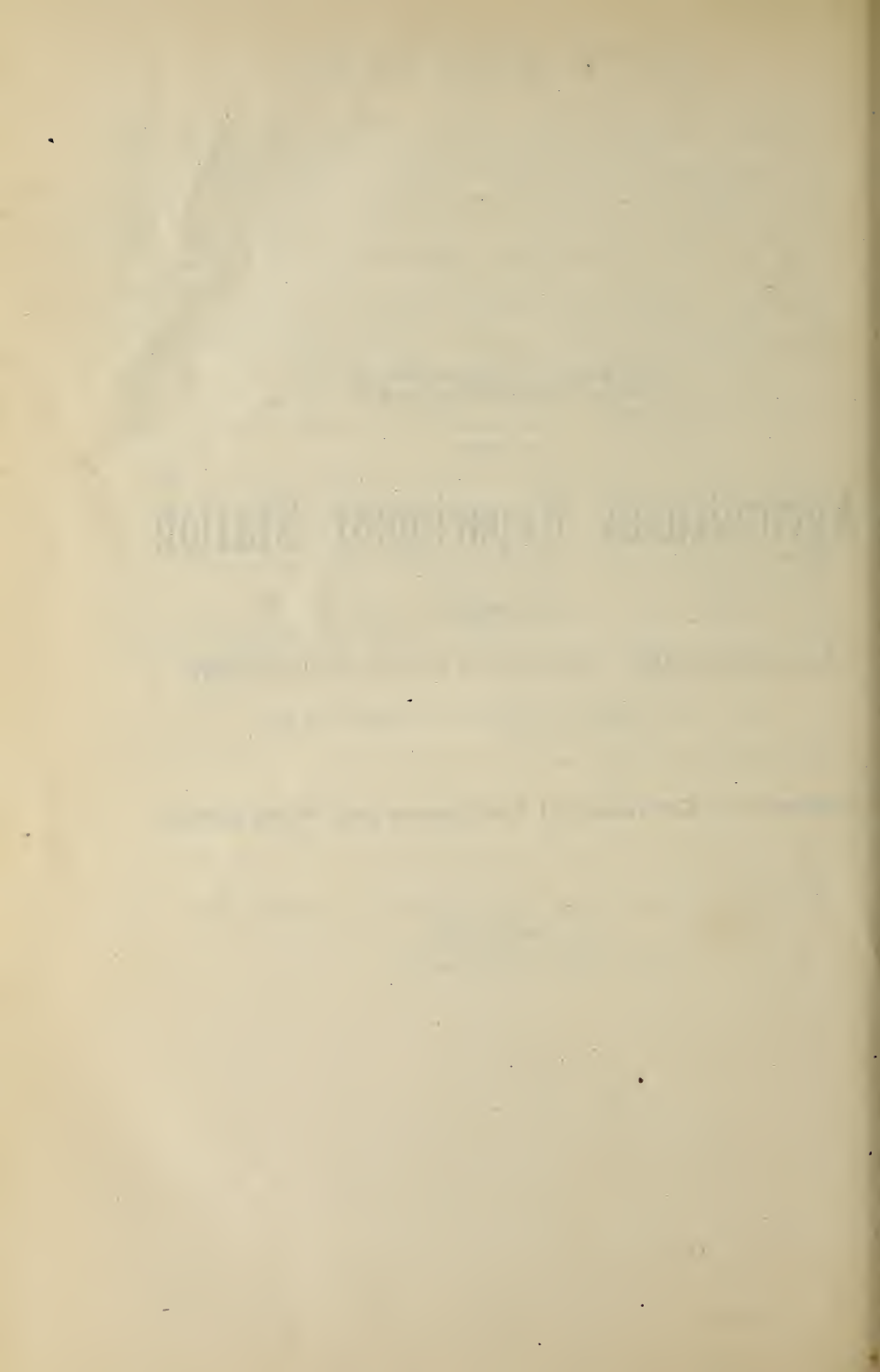
**Analyses of Commercial Fertilizers and Paris Green.**

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ISSUED BY THE LOUISIANA STATE BOARD OF AGRICULTURE  
AND IMMIGRATION.

J. G. LEE, COMMISSIONER.



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## AND A. & M. COLLEGE.

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LOUISIANA STATE UNIVERSITY AND A. AND M. COLLEGE,  
OFFICE OF STATE EXPERIMENT STATION,

Baton Rouge, La., September 1, 1904.

*Major J. G. Lee, Commissioner of Agriculture and Immigration,  
Baton Rouge, La.*

DEAR SIR:—I hand you herewith analyses of Commercial Fertilizers and Paris Greens, made in the laboratories of the Station since last season.

Respectfully submitted,

WILLIAM C. STUBBS,

Director and State Chemist.

## REPORT OF THE DIRECTOR AND STATE CHEMIST.

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The analyses of Commercial Fertilizers contained in this report are of four kinds:

1. Samples selected at the discretion of the Commissioner of Agriculture and inspectors for purposes of inspection.

2. Samples drawn by the purchaser, under regulations prescribed by the Commissioner of Agriculture:

The above are required by law.

3. Samples used by the Stations.

4. Samples sent by private parties.

While the Station is not required by law to work for private parties, yet all samples sent by individual citizens of the State will be analyzed without charge; *provided*, the means of the Station will permit; *provided*, always, that in the discretion of the Director such analysis will be conducive to public welfare.

The fertilizer law, in full, is herein inserted for the guidance of the public. Under it, every citizen of the State is amply protected from fraud and imposition by unscrupulous dealers, and there exists absolutely no cause for distrust in the purchase of commercial fertilizers, if the farmer will but claim the protection afforded him. The sellers of good wares are also protected, as ample facilities are afforded them of properly advertising their goods.

The following is the law:

SECTION 1. Be it enacted by the General Assembly of the State of Louisiana, that the State Board of Agriculture and Immigration shall have power to make and establish rules to carry out the designs and purposes of this act, and in conformity thereto, for the purpose of maintaining effective control of the manufacture and sale in this State of commercial fertilizers and for the suppression of adulteration and fraud therein, as authorized by Article Three Hundred and Six (306) of the Constitution of the State of Louisiana.



SEC. 2. Be it further enacted, etc., That it shall be the duty of any manufacturer or dealer in, or any person soliciting orders, whether by sample or otherwise or whether such orders are to be accepted by him or his principal for the sale of any commercial fertilizer (which term shall not be held to include lime, land plaster, cotton seed meal, ashes or common salt), before the same is offered for sale in this State, to submit to the Commissioner of Agriculture and Immigration for inspection and analysis fair samples of the same, which shall be analyzed by the official chemist, and to furnish a written or printed statement setting forth: First—The name and brand under which said fertilizer is to be sold, the number of pounds contained or to be contained in the package in which it is to be put upon the market for sale, and the name of the manufacturer and the place or places of manufacture; second, a statement setting forth the amount of the named ingredients which he or they guarantee said fertilizer to contain (1) nitrogen, (2) soluble phosphoric acid; third, reverted phosphoric acid; fourth, insoluble phosphoric acid; fifth, potash. Said statement so to be furnished, accompanied by a sample or samples of the fertilizer to be inspected, and which shall be analyzed by the official chemist, shall be considered as constituting a guarantee to the purchaser that every package of such fertilizer contains not less than the amount of each ingredient set forth in the statement and contained in the sample or samples. This shall, however, not preclude the party making the statement from setting forth any other ingredients which his fertilizer may contain, which additional ingredients shall be considered as embraced in the guarantee above stated. That an inspection fee of twenty-five cents per ton upon any fertilizer sold for use in this State shall be paid by the seller, solicitors or agents, etc., thereof to the Commissioner of Agriculture and Immigration, which inspection fee shall cover the cost of inspection and analysis made by the commissioner or the official chemist, or at the request of either the seller or the buyer, and the certificate to be furnished by the commissioner. Payment of said inspection fee shall be evidenced by tags to be furnished by the Commissioner of Agriculture and Immigration sufficient in number to

place one upon each package of fertilizer required to make up a ton according to the way in which each particular fertilizer may be packed and shipped.

SEC. 3. Be it further enacted, etc., That every person proposing to deal in or solicit orders for the sale of commercial fertilizers in the State of Louisiana, shall, after submitting the sample or samples of fertilizer or fertilizers for inspection and analysis, and filing the statement above provided for with the Commissioner of Agriculture and Immigration, receive from the said commissioner a certificate stating that he has complied with the foregoing section, which certificate shall be furnished by the commissioner without any additional charge therefor. That the said certificate when furnished shall authorize the party receiving the same to manufacture for sale in this State, to solicit orders for the sale of, or to deal in this State in commercial fertilizers or to sell fertilizers for use in this State. Any person manufacturing, dealing in, selling or soliciting orders in the State of Louisiana, for the sale of commercial fertilizers, shall, when he has agreed to sell any lot of said fertilizers, notify in writing, before delivery or shipment to the purchaser thereof, the nearest fertilizer inspector of the sale, the amount of the lot sold, the names of the seller and purchaser, and the location and situation of the lot of fertilizers so sold, and when so notified the inspector of fertilizers shall proceed to sample said lot, and shall forward to the commissioner such sample for analysis, with the names of the vendor and vendee, the brand of fertilizer, the weight and description of the packages, the name of the manufacturer, the place of manufacture, and the marks on said packages, and the vendor shall not ship or deliver the lot or lots sold to the purchaser until such inspector has made such inspection, provided that in the event the inspection before shipment or delivery to the purchaser be found to be impracticable, then said inspection shall be made immediately after actual delivery to the purchaser, or so soon thereafter as practicable under the circumstances. In order to provide for said inspection the commissioner shall appoint inspectors in the various portions of the State, and shall publish the names of said inspectors and



their postoffice addresses, to whom such notification shall be sent and by whom said inspection shall be made. That no person who has failed to file the statement aforesaid and to receive the certificate of authority aforesaid, shall be authorized to manufacture for sale in this State or to deal in commercial fertilizers, or to sell or solicit orders for the sale of fertilizers for use in this State, and any person so manufacturing for sale in this State, or so dealing or selling or soliciting orders therefor for use in this State, without having submitted his fertilizers for inspection and analysis and filed the aforesaid statement and receiving the certificate aforesaid, shall be liable for each violation to a fine not exceeding five hundred dollars (\$500), which fine shall be recoverable before any court of competent jurisdiction, at the suit of the commissioner or any citizen, without bond or advanced cost, and shall be disposed of as hereinafter provided.

SEC. 4. Be it further enacted, etc., That it shall be the duty of the Board of Agriculture and Immigration or its commissioner, at the opening of each season, to issue and distribute circulars setting forth the brands of fertilizers sold in this State, their analysis as claimed by their manufacturers or dealers and their relative and, if known, their commercial value.

SEC. 5. Be it further enacted, etc., That it shall be the duty of the commissioner to cause to be prepared tags of suitable material, with proper fastenings for attaching the same to packages of fertilizers, and to have printed thereon the word "Guaranteed," with the year or season in which they are to be used, and a fac-simile of the signature of the said commissioner. The said tags shall be furnished by said commissioner to any dealer or solicitor or manufacturer of commercial fertilizers who shall have complied with the foregoing provisions of this act upon the payment by said dealer, manufacturer or solicitor to the said commissioner, of twenty-five cents for a sufficient number of tags to tag a ton of such commercial fertilizer, as evidence of the payment of the inspection fee provided for in section 2.

SEC. 6. Be it further enacted, etc., That it shall be the duty of every person, before selling any commercial fertilizers in this

State or for use in this State, to attach or cause to be attached to each bag, barrel or package thereof one of the tags herein before described, designating the quantity of the fertilizer in the bag, barrel or package to which it is attached, as evidence of the payment of the inspection fee imposed by section 2. Any person who shall sell any package of commercial fertilizer which has not been tagged as herein provided, shall be guilty of a misdemeanor, and on conviction thereof, shall be fined in the sum of two hundred and fifty dollars (\$250) for each lot of fertilizers so sold; and the said person shall be besides liable to a penalty of five dollars (\$5) for each omission to tag each package, each omission to constitute a separate offense, which penalty may be sued for either by the commissioner or any other person for the uses hereafter declared. And it shall be the duty of the Attorney General and of the several District Attorneys when requested by the commissioner, to enjoin any person, firm or corporation, resident or non-resident, from manufacturing or selling or soliciting orders for the sale of fertilizers in this State or selling fertilizers for use in this State without complying with all the provisions of this act, without bond or advanced cost. Any person who shall counterfeit or use a counterfeit of the tag prescribed by this act, knowing the same to be counterfeited, or who shall use them a second time after the said tags have been once attached, shall be guilty of a misdemeanor, and on conviction thereof shall be fined in a sum not exceeding five hundred dollars (\$500), one-half of which fine shall be paid to the informer; which fine may be doubled or tripled at each second or third conviction, and so on progressively for subsequent conviction.

SEC. 7. Be it further enacted, etc., That all fertilizers or chemicals manufactured for use as fertilizers, offered for sale or distribution in this State, shall have printed upon or attached to bag, barrel or package, in such manner as the commissioner may prescribe the true analysis of such fertilizer or chemical as claimed by the manufacturer, showing the per cent of valuable ingredients such fertilizers or chemicals contained, as set forth in section second of this act. And for each and every omission so to

print upon or attach to each bag, barrel or package, the offender shall be liable to a fine of one dollar (\$1.00) for each package so sold, recoverable by civil suit by the commissioner or any person in a court of competent jurisdiction, said fines and penalties when recovered to go to the uses hereinafter specified in this act.

SEC. 8. Be it further enacted, etc., That the commissioner shall have a privilege on any commercial fertilizers sold in this State or sold for use in this State in violation and contravention of the provisions of this act, and may proceed by writ of provisional seizure against the fertilizers so sold in the hands of whomsoever they may be, and wheresoever he may find them, regardless of the domicile of the owner thereof, to recover the fines and penalties due for the illegal sale thereof, by presenting a petition to a competent judge or magistrate, within whose jurisdiction said fertilizers are found, stating on oath at the foot of the petition the amount and nature of the demand, the fertilizer on which the privilege exists, and praying that the fertilizer be seized to satisfy the claim and pay the costs of suit, and thereafter the proceeding in said suit or suits shall be conducted in the manner provided for in Articles two hundred and ninety-two (292), two hundred and ninety-three (293), two hundred and ninety-four (294) and two hundred and ninety-five (295) of the Code of Practice, all of which are hereby made applicable to the proceedings herein provided for, provided that if there be judgment in favor of plaintiff in such suits, with privilege on the fertilizers, and the same be ordered to be sold to satisfy such judgment, the commissioner shall, prior to said sale, draw proper samples from said fertilizers, and cause the same to be analyzed by the official chemist, and shall affix to the packages thereof the guarantee tags as required by this act, so that the purchaser at the sheriff's or constable's sale may purchase the said fertilizers under a full guarantee, as provided for in this act.

SEC. 9. Be it further enacted, etc., That the commissioner may inspect, or cause to be inspected, and may obtain, or cause to be obtained, at his discretion, fair samples of all fertilizers sold

or offered for sale in this State, or offered for sale or sold for use in this State, and shall have them analyzed by the official chemist, and shall publish the analysis for the information and protection of the public.

SEC. 10. Be it further enacted, etc., That it shall be the duty of every person who sells a lot or package of commercial fertilizer, upon the request of the purchaser to draw from the same, in the presence of the purchaser or his agent, a fair and correct sample in such a manner as the commissioner shall prescribe, and submit the same for inspection as hereinafter provided.

SEC. 11. Be it further enacted, etc., That no fraudulent fertilizers shall be sold for use in this State; that the price of fraudulent fertilizers shall not be collected by any process of law; that no person buying fraudulent fertilizers in this State or sold for use in this State shall be bound in any manner to pay the price or cost thereof; that all fertilizers sold in this State or for use in this State without having been inspected or tagged as provided for in this act shall be conclusively presumed to be fraudulent fertilizers, within the meaning of this prohibitory law, the price of which shall not be collected, and all notes, contracts and obligations based on the sale thereof shall be null and void.

SEC. 12. Be it further enacted, etc., That the commissioner shall prescribe the rules and regulations providing for the inspection of fertilizers; shall collect the monies arising from the issuance of tags as evidence of inspection, and from fines imposed under this act, and shall require the same to be deposited with the Treasurer of this State, and only to be drawn therefrom upon the warrants issued by the Auditor of the State upon the requisition of the commissioner; and the said commissioner shall be entitled to receive no fees for collecting or disbursing said money, except his salary, as provided for by law, but he shall be allowed, if needed, a clerk at the salary to be fixed by the said Board of Agriculture and Immigration not to exceed \$1,200 per annum and payable out of the Fertilizer Fund; and all sums of money arising from the provisions of this act shall be known as the "Fertilizer Fund," and shall be kept by the Treasurer



separate from other public funds, and shall be exclusively used, as far as they may go, to defray the expenses of inspection and analysis herein required, and of making practical and scientific experiment with fertilizers to test their virtue and value.

SEC. 13. Be it further enacted, etc., That the net proceeds of all inspection fees imposed by this act, and of all fines and penalties collected under this act (of all which the commissioner shall keep a correct and detailed account) constituting the Fertilizer Fund, shall be divided between the State Experiment Station at Baton Rouge, the Sugar Experiment Station, at New Orleans, and the North Louisiana Experiment Station, at Calhoun, Louisiana, to be used for the purpose herein designated as compensation for all analysis, tests and experiments required. That the director of said stations shall be the official chemist of the Louisiana State Board of Agriculture and Immigration; he shall have made all analyses required or authorized under this act and shall attend all chemical and agricultural conventions, the leading objects of which are to discuss questions pertaining to fertilizers. He shall perform such other duties as may be imposed by this act without compensation other than the benefits which may be derived by the stations from their participation in the said Fertilizer Fund as hereinbefore directed, except his traveling expenses in attending said conventions, which shall be paid out of the Fertilizer Fund.

SEC. 14. Be it further enacted, etc., That Act No. 72, of 1894, be and the same is hereby repealed in so far as it might operate in the future; but as to the offenses committed, liabilities already incurred, and claims now existing thereunder, it shall be and remain in full force and effect.

#### AN ACT

To amend and re-enact Sections 1 and 2 of Act No. 126, of 1898, entitled "An Act to carry into effect Article 306 of the Constitution of the State of Louisiana; to define the duties and powers of the State Board of Agriculture and Immigration, and those of the Commissioner of Agriculture and Immigration in relation to the suppression of adulteration and fraud in the sale of commercial fertilizers in conformity therewith;

to provide for the inspection and analysis of all commercial fertilizers sold for use in the State of Louisiana, and for the payment by the seller of the inspection fees therefor; to authorize the appointment of fertilizer inspectors, to provide for guarantees of the component chemicals contained in fertilizers, and the affixing of tags to the packages thereof as evidence of the guarantee and inspection thereof; to prohibit the sale of illegal or fraudulent fertilizers in violation of the provisions of this Act, and affixing fines and penalties for the violation of the provisions of this Act; to provide for judicial proceedings *in rem* against fertilizers sold in contravention of this Act; to give the Commissioner of Agriculture and Immigration a privilege thereon, and the right to the writ of provisional seizure to conserve said privilege, and to define the methods of said procedure; to provide for suits for the recovery of fines and penalties and injunction under this Act, to provide for the distribution and expenditure of the fees and penalties collected under the provisions of this Act, and their appropriation to fertilizer experiment purposes, and to repeal Act No. 72, of 1894, in so far as it might operate in the future.”

Approved July 13, 1898.

SECTION 1. Be it enacted by the General Assembly of the State of Louisiana, That section 1 of said Act, No. 126 of the regular session of the General Assembly of 1898, approved July 13, 1898, be amended and re-enacted so as to read as follows:

SECTION 1. That the State Board of Agriculture and Immigration shall have power to make and establish rules to carry out the designs and purposes of this Act, and in conformity thereto, for the purpose of maintaining effective control of the manufacture and sale in this State of all commercial fertilizers and cotton seed meal when sold or offered for sale as a fertilizer, and for the suppression of adulteration and fraud therein, as authorized by Article 306 of the Constitution of the State of Louisiana.

SEC. 2. Be it further enacted, etc., That Section 2 of said Act No. 126, of 1898, be amended and re-enacted so as to read as follows:

SEC. 2. That it shall be the duty of any manufacturer or



dealer in fertilizers, or any person soliciting orders, whether by sample or otherwise, or whether such orders are to be accepted by him or his principal, for the sale of any commercial fertilizer (which term is intended to and shall include cotton seed meal when sold or offered for sale as a fertilizer, but shall not include lime, and plaster, ashes or common salt), before the same is offered for sale in this State, to submit to the Commissioner of Agriculture and Immigration for inspection and analysis fair samples of the same, which shall be analyzed by the official chemist, and to furnish a written or printed statement setting forth: first, the name and brand under which said fertilizer is to be sold, the number of pounds contained or to be contained in the package in which it is to be put upon the market for sale, and the name of the manufacturer and the place or places of manufacture. Second, a statement setting forth the amount of the named ingredients, which he or they guarantee said fertilizer to contain—(1) nitrogen, (2) soluble phosphoric acid, (3) reverted phosphoric acid, (4) insoluble phosphoric acid, (5) potash. Said statement to be furnished accompanied by a sample or samples of the fertilizer to be inspected, and which shall be analyzed by the official chemist, shall be considered as constituting a guarantee to the purchaser that every package of such fertilizer contains not less than the amount of each ingredient set forth in the statement and contained in the sample or samples. This shall, however, preclude the party making the statement from setting forth any other ingredients which his fertilizer may contain, which additional ingredients shall be considered as embraced in the guarantee above stated. That an inspection fee of twenty-five cents per ton upon any fertilizer sold for use in this State, shall be paid by the seller, solicitor or agents, etc., thereof, to the Commissioner of Agriculture and Immigration, which inspection fee shall cover the cost of inspection and analysis made by the commissioner or the official chemist, or at the request of either the seller or the buyer, and the certificate to be furnished by the Commissioner. Payment of said inspection fee shall be evidenced by tags to be furnished by the Commissioner of Agriculture and Immigration sufficient in

number to place one upon each package of fertilizer required to make up a ton according to the way in which the particular fertilizer may be packed and shipped.

### COMMERCIAL FERTILIZERS.

All fertilizers sold on our markets are valuable just in proportion to the quantity and quality of the following ingredients, which they may contain, viz: Nitrogen (ammonia), phosphoric acid and potash. A fertilizer may contain one or two, or all of these ingredients, and may consist of (1) nitrogen (ammonia) alone, (2) phosphoric acid alone, (3) potash alone, (4) nitrogen (ammonia) and phosphoric acid, (5) phosphoric acid and potash, (6) nitrogen (ammonia) and potash, (7) nitrogen (ammonia), phosphoric acid and potash.

No. 7 is a complete fertilizer, *i. e.*, furnishing all three of the ingredients. These ingredients are combined in different proportions to suit the wants of different crops and different soils. No. 6 is rarely found in Southern markets, since nearly all Southern soil require phosphoric acid, and its absence renders it unadapted to wants of the farmer. The others are all found in our trade centers.

### 1st—NITROGEN MANURES.

Nitrogen is the most fugitive as well as the most costly ingredient of fertilizers. It unites chemically with three parts of hydrogen to form ammonia (hartshorn or shops); every fourteen parts of nitrogen making seventeen parts by weight of ammonia. It also unites with oxygen to form the basis of nitric acid, two parts of nitrogen requiring five parts of oxygen, and this combination dissolved in water gives nitric acid, a form into which (it is believed) that all organic nitrogen must be dissolved before it can serve as plant food. Nitrogen is offered to the trade in three forms, viz:

(a) Mineral nitrogen in nitrate of soda (containing when pure over 16 per cent nitrogen), nitrate of potash (14 per cent), and sulphate of ammonia (21 per cent).

(b) Animal nitrogen in dried blood, tankage, azotin, cracklings, fish scrap, leather, wool waste, etc.

(c) Vegetable nitrogen in cotton seed, cotton seed meal, linseed meal, castor pomace, and peat.

Blood, tankage, fish scrap, and oil meals are highly active fertilizers, while leather, wool waste and peat are very slowly available.

In the North and England the mineral forms, particularly nitrate of soda and sulphate of ammonia, are largely used for top dressing small grains and grasses, as well as in combinations with phosphoric acid and potash to make complete fertilizers for general use and are very highly esteemed. In the South, on account of the fear of loss by leaching from the soil, they are used with greater care and in much less quantities.

Cotton seed meal contains, besides nitrogen, small amounts of phosphoric acid and potash. A fair sample of meal, *free from hulls*, should yield 7 per cent nitrogen, 3 per cent phosphoric acid and 2 per cent potash. This is a cheap source of nitrogen, and experiments have demonstrated that it is, perhaps, the best form for Southern agriculture. In buying it, however, *caution* is necessary to see that it is well decorticated, *i. e.*, free from hulls. Samples containing 30 per cent of hulls have been found on the market.

## (2) PHOSPHORIC ACID MANURES.

These are generally phosphate rocks treated with sulphuric acid. Sometimes pure bones or bone black, or bone ash, are treated with the same acid, and resulting mixtures styled dissolved bones or superphosphates. When made from phosphatic rock, bone black or bone ash, they contain only phosphoric acid. When pure bones are used, 3 to 5 per cent of ammonia is also found. These phosphatic manures usually contain their phosphoric acid in different forms. Some of it is readily soluble in water, and is highly available as plant food; some of it is only soluble in acids, and is, therefore, only slowly, if at all, available to plants, while another portion is intermediate in solubility between the water soluble and the acid soluble. The chemist uses citrate of ammonia to dissolve this form; and hence it is denominated as citrate soluble phosphoric acid. It is believed by many, that this form of phosphoric acid has resulted from a

chemical action of the water soluble upon the acid soluble, and hence it is often called "*reverted*," "*reduced*," etc. The water soluble is readily available on all soils and by all plants; the citrate soluble in soils containing vegetable matter, is believed to be available to many plants, while the acid soluble is not immediately useful to most soils. The water soluble and citrate soluble are usually taken together and called available phosphoric acid. In buying phosphatic manures, preference should be given, first to the water soluble, then to the citrate soluble. These three forms of phosphoric acid are usually called "*soluble*," "*reduced*" and "*insoluble*."

### (3) POTASH MANURES.

Formerly ashes were the only commercial source of potash, and even now are to be found on the market in the form of wood ashes and cotton seed hull ashes. The latter are in great demand by the tobacco growers of Connecticut. But ashes of all kinds have been nearly supplanted by the cheap and excellent potash manures from Stassfurth and Leopoldshall, Germany, which are now sold in every market. The German Kali works have established an headquarters in this country, and are supplying the trade with every desirable form of potash. Those forms sold usually in the South are:

(a) Kainite, the crude product of the mines, and contains, besides, potash, magnesia, soda, sulphuric acid and chlorine. This form is largely used in a compost of stable manure, cotton seed and acid phosphate prepared at home by the cotton farmer, or mixed acid phosphates and nitrogenous manures by the manufacturers for cotton fertilizers. It is extremely doubtful whether most Southern soils need potash; and every farmer should determine the question experimentally on his own soil before making excessive purchases of this ingredient. When potash is needed this is a cheap and excellent source, containing about 12 per cent.

(b) Sulphate of potash, a refined product, containing a large amount of potash in a very desirable form, is extensively



used in some countries, upon certain crops, notably tobacco and Irish potatoes.

(c) Muriate of potash, another refined product, containing a large percentage of potash. This salt furnishes potash in the cheapest form.

#### (4) NITROGEN AND PHOSPHORIC ACID.

Formerly a large number of fertilizers were found on our markets containing only these two ingredients, but recently, however, potash in some form has been added to them all. This addition has been made either to meet the requirements of the farmers or the inclination of the manufacturers to furnish complete fertilizers. Potash is cheap, and any demand for it is readily supplied. In Louisiana, where the use of potash manures have been found to be of little or no profit, two fertilizers have become extremely popular and are extensively used, viz: tankage and a mixture of cotton seed meal and phosphate. Both may properly be located under this division, though strictly speaking the *mixture* would be excluded by virtue of the small content of potash in the cotton seed meal. The *mixture*, made in different proportions to suit different crops upon different soils, is very extensively used all over the State and gives general satisfaction. It also furnishes these two ingredients (nitrogen and phosphoric acid) in their cheapest and best forms.

Tankage is extensively used under sugar cane. It contains from 4 per cent to 12 per cent of nitrogen and 6 per cent to 20 per cent of phosphoric acid. It is a mixture of blood, meat, bones, etc., of the slaughter houses (from which the fat has been extracted), dried and pulverized. Its composition varies between wide limits, whether the blood and meat or the bones predominate. If the former, the nitrogen is high, and if the latter, phosphoric acid. It is the nitrogen which gives it its chief value, and the larger the quantity of this, derived from blood or meat (both highly available forms of nitrogen) the more

responsive it becomes as a fertilizer. Neither the nitrogen nor the phosphoric acid in bones are readily available on most of our soils. Hence in buying tankage great care should be exercised to obtain as large a nitrogen content as possible.

Fish scrap might also be included\*under this head, since it contains only nitrogen and phosphoric acid, but so little is sold in this State as to merit only this passing remark.

Ground bones (raw and steamed) may also be included here. They are used to some extent by the truck growers of East Louisiana, and should be subjected to the same inspection as other fertilizers before use. Ground bones depend primarily for their value upon physical and chemical properties. They should contain from 3 to 5 per cent nitrogen and 20 to 24 per cent phosphoric acid and be very finely ground. They are slowly available at best, and hence in using them with expectation of early returns, care must be exercised in securing them *very finely ground*.

#### (5) PHOSPHORIC ACID AND POTASH.

To make acid phosphates suitable for composting, many dealers have recently added potash. This addition necessarily lowers the percentage of phosphoric acid. Manufacturers in and around Charleston, S. C., have adopted the custom of calling this class of goods "Acid Phosphates," and those which contain no potash, "Dissolved Bones." These are extensively used in Georgia for the compost of stable manure and cotton seed, but in this State the pure acid phosphates has given very satisfactory results in the compost.

#### (6) NITROGEN AND POTASH.

The great and crying want of Southern soils is phosphoric acid; hence no manure without it has hitherto met with favor. Accordingly this class of manures is rarely met with in the South.



## (7) COMPLETE MANURES.

Containing nitrogen, phosphoric acid and potash, constitute the bulk of the commercial fertilizers offered to the trade. These are generally manipulated out of the different forms described under the previous heads, combined in such proportions as to meet the imagined or real wants of certain crops. For cotton they usually contain from  $2\frac{1}{2}$  to 3 per cent nitrogen, 8 to 12 per cent available phosphoric acid and 2 to 3 per cent potash. For corn and cane the quantity of nitrogen is greatly increased, with a corresponding decline in phosphoric acid. Many Southern manufacturers of fertilizers are making most excellent wares, mixtures of cotton seed meal and phosphates and kainite. These mixtures, varying in porportion only, are applicable to most every crop grown in this latitude and are sold at prices satisfactory to buyers.

## CAUTIONS IN BUYING FERTILIZERS.

Before purchasing, a farmer or planter should know the requirements of his crop and soil, and then buy only such manures as will supply them. Then get the dealer or manufacturer to answer the following questions:

How much soluble phosphoric acid do you guarantee?

How much reverted phosphoric acid do you guarantee?

How much nitrogen or ammonia do you guarantee?

How much potash do you guarantee?

With the reply to these questions one can easily calculate the approximate commercial value of a ton of the goods desired.

In a plain acid phosphate at least 12 per cent available phosphoric acid should be guaranteed.

In cane fertilizers, 3 per cent nitrogen and 7 per cent available phosphoric acid, and in cotton fertilizers 2 per cent nitrogen and 8 per cent available phosphoric acid should be the least quantities accepted.

## VALUATION OF FERTILIZERS.

The commercial value of a fertilizer is regulated by the prices demanded in commerce for the different forms of the three ingredients, nitrogen (ammonia), phosphoric acid and potash. These prices fluctuate according to the demand and supply. In some parts of the North, nitrogen is assigned a separate valuation for each of its forms—that in nitrates and ammonia salts receiving the highest figure, and in leather and peat, the lowest.

In Connecticut and Massachusetts, a determination of the forms in which this ingredient occurs must be made before its commercial value can be calculated. All the forms of nitrogen have heretofore been considered of equal money value in the South and but one price assigned. This, of course, precludes the existence of nitrogen in form of leather dust, or powdered horn, forms regarded as unavailable and of little money or agricultural value.

The soluble and reverted forms of phosphoric acid have together been styled as “available,” and assigned one value. The insoluble phosphoric acid has received no valuation. All forms of potash soluble in water have been regarded as of equal value.

The following tariff of prices has been adopted for the past and coming season :

Nitrogen, 16 cents per pound, which makes ammonia 13 1-10 cents per pound.

Soluble phosphoric acid, 5 cents per pound.

Reverted phosphoric acid, 5 cents per pound.

Potash, 5 cents per pound.

The above prices may be used to illustrate the method by which the commercial value of a fertilizer may be approximately estimated, *e. g.*: A fertilizer containing by analysis the following :

Nitrogen, 3 per cent; soluble phosphoric acid, 6 per cent; reverted, 4 per cent; potash, 2 per cent. What is the approximate commercial value per ton?

A ton will contain :

60	pounds nitrogen, 16 cents.....	\$9.60
120	“ soluble phosphoric acid, 5 cents.....	6.00
80	“ reverted phosphoric acid, 5 cents.....	4.00
40	“ potash, 5 cents.....	2.00

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Value per ton.....\$21.60

In this way the approximate value of any commercial fertilizer can be estimated. These prices are by no means fixed. They fluctuate almost daily in the markets of the world in accordance with the law of supply and demand. But the tariff given is believed to be nearly representative of the average of prices during the past year, and hence are adopted for the ensuing season.

### LABORATORY WORK.

The following number of analyses have been made during the season just ended in the laboratories of the Stations:

Complete Fertilizers.....	2,409
Tankages .....	317
Bone Meals.....	239
Acid Phosphates.....	408
Cotton Seed Meals.....	824
Acid Phosphates, with Potash.....	60
Miscellaneous .....	76
Private samples, etc.....	47

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Total analyses.....4,380

### AMMONIATED SUPERPHOSPHATES AND GUANOS.

Ammoniated superphosphates and guanos constitute the chief bulk of the fertilizers consumed by the farmers of the Southern States. The term “complete fertilizer” is often applied to them on account of the fact that they contain all three of the most essential fertilizing constituents, and their range of adaptability is, in consequence, much greater than that of any of

the partial manures. As might be supposed, there is great diversity in the composition of fertilizers of this class, both as regards the proportions of the fertilizing ingredients and also the forms in which they are supplied, the quantities of these essential constituents being so regulated as to correspond with the manufacturer's ideas as to the demands of our principal crops.

The following were analyzed:

Number of Samples.	Name of Manufacturer and Brand.	PHOSPHORIC ACID.					Nitrogen	Ammonia	Potash
		Water Sol- uble	Reverted	Insoluble	Total	Available			
7	ARCADIA COTTON OIL MILL & MANUFACTURING CO., ARCADIA, LA. CORN FERTILIZER.					7.00	3.50	4.25	1.00
	Guarantee.....	6.23	3.50	1.21	10.94	9.73	3.80	4.61	1.00
	Average of analyses..... All samples up to guarantee.								
4	COTTON FERTILIZER.					10.50	1.75	2.12	.50
	Guarantee.....	9.52	4.56	.62	14.70	14.08	2.18	2.65	.40
	Average of analyses..... Four samples below guarantee in potash.								
2	POOR LAND.					4.00	5.50	6.68	1.50
	Guarantee.....	3.13	3.32	.39	6.84	6.45	6.06	7.35	1.03
	Average of analyses..... Two samples below guarantee in potash.								
11	ARMOUR FERTILIZER WORKS, KANSAS CITY, KAN., AND CHICAGO, ILL. PLANTATION SPECIAL.								
	Guarantee.....			2.50	6.50	4.00	7.00	8.50	.....
	Average of analyses.....			3.12	9.30	6.18	7.36	8.93	.....
	Maximum.....			5.57	13.50	7.93	7.62	9.25	.....
	Minimum.....			1.45	6.80	4.30	6.74	8.18	.....
	Two samples below guarantee in nitrogen. Nine samples up to or above guarantee,								

## CAPITAL FERTILIZER CO., JACKSON, MISS.

## NONPAREIL.

11	Guarantee .....	7.50	2.00	1.00	10.50	9.50	1.65	2.00	2.25
	Average of analyses .....	7.77	3.03	.97	11.77	10.80	1.55	1.88	2.50
	Maximum .....	8.40	3.63	1.30	13.33	12.03	1.58	1.94	2.73
	Minimum .....	7.15	2.43	.64	10.22	9.58	1.52	1.84	2.28

Eleven samples below guarantee in nitrogen.

## FEDERAL CHEMICAL CO., WEST NASHVILLE, TENN.

## DAYBREAK.

1	Guarantee .....	6.00	2.00	1.00	9.00	8.00	1.65	2.00	2.00
	Analysis .....	7.11	4.80	1.70	13.61	11.91	1.65	2.00	1.55
	Below guarantee in potash.								

HAZLEHURST OIL MILL & FERTILIZER CO.,  
HAZLEHURST, MISS.

## IMPERIAL.

47	Guarantee .....	7.00	2.00	1.00	10.00	9.00	1.65	2.00	1.50
	Average of analyses .....	7.85	2.90	1.37	12.12	10.75	1.70	2.06	1.98
	Maximum .....	8.00	3.65	1.70	13.30	11.60	1.73	2.10	2.17
	Minimum .....	7.60	2.49	1.10	11.59	10.28	1.68	2.04	1.81

All samples up to guarantee.

## DIAMOND "A." VEGETABLE GROWER.

2	Guarantee .....	5.00	1.50	1.00	7.50	6.50	2.00	2.43	3.00
	Average of analyses .....	3.20	2.03	.95	6.18	5.23	3.10	3.76	4.20
	Two samples below guarantee in available phosphoric acid.								

## SUPERIOR.

1	Guarantee .....	7.00	2.00	1.00	10.00	9.00	1.65	2.00	1.50
	Analysis .....	8.15	2.16	.83	11.14	10.31	1.75	2.12	2.00
	Up to guarantee.								

HOMER COTTON OIL & ICE CO., LTD., HOMER, LA.  
CLAIBORNE MIXTURE NO. 1.

23	Guarantee .....	8.00	2.00	1.00	11.00	10.00	1.75	2.12	.50
	Average of analyses .....	8.53	3.53	.90	12.96	12.06	2.20	2.67	.74



Number of Samples	Name of Manufacturer and Brand	PHOSPHORIC ACID.					Nitrogen	Ammonia	Potash
		Water Sol- uble	Reverted	Insoluble	Total	Available			
10	CLAIBORNE MIXTURE, NO. 1.— <i>Continued.</i>								
	Maximum.....	9.50	3.96	.95	13.55	12.60	2.59	3.15	.79
	Minimum.....	7.55	3.10	.85	12.36	11.51	1.81	2.19	.68
	All up to guarantee.								
	CLAIBORNE MIXTURE, NO. 2.								
	Guarantee.....	4.00	2.00	1.00	7.00	6.00	3.00	3.64	1.00
	Average of analyses.....	7.64	4.33	.70	12.67	11.97	2.60	3.16	.72
	Maximum.....	8.07	4.47	.80	13.32	12.52	2.71	3.29	.90
	Minimum.....	7.20	4.06	.61	12.28	11.67	2.47	3.01	.56
	Ten samples below guarantee in nitrogen and potash.								
4	JACKSON FERTILIZER CO., JACKSON, MISS.								
	CHICAGO RAW BONE SUPERPHOSPHATE.								
	Guarantee.....	7.50	2.00	1.00	10.50	9.50	1.65	2.00	1.50
	Average of analyses.....	7.70	3.63	4.02	15.08	11.06	1.65	2.00	2.04
2	All up to guarantee.								
	FRUIT AND VEGETABLE.								
	Guarantee.....	3.00	3.00	1.00	7.00	6.00	3.00	3.64	4.00
	Average of analyses.....	4.91	1.79	.90	7.60	6.70	2.81	3.41	4.00
2	Two samples below guarantee in nitr. gen.								
	RED STAR.								
	Guarantee.....	7.50	2.00			9.50	1.65	2.00	2.25
	Average of analyses.....	6.99	2.72	1.06	10.77	9.71	1.67	2.02	2.20
25	Two samples below guarantee in potash.								
	ROYAL "C" BRAND.								
	Guarantee.....	7.50	2.00	1.00	10.50	9.50	1.65	2.00	1.80
	Average of analyses.....	7.92	2.78	1.49	12.19	10.70	1.70	2.06	2.18

	Maximum.....	8.95	3.50	2.40	13.40	11.05	2.25	2.73	2.70
	Minimum.....	6.50	2.05	1.15	11.06	9.72	1.37	1.66	1.88
	Ten samples below guarantee in nitrogen.								
	Fifteen samples up to or above guarantee.								
	MERIDIAN FERTILIZER FACTORY, MERIDIAN, MISS.								
	BLOOD AND BONE.								
2	Guarantee.....	8.00	1.00	1.00	10.00	9.00	1.65	2.00	1.50
	Average of analyses.....	8.00	3.55	2.22	13.77	11.55	1.65	2.00	1.70
	All samples up to guarantee.								
	HOME MIXTURE.								
116	Guarantee.....	8.00	1.00	1.00	10.00	9.00	1.65	2.00	1.50
	Average of analyses.....	8.68	2.88	1.09	12.65	11.56	1.73	2.10	1.64
	Maximum.....	8.95	3.20	1.32	12.95	11.77	1.89	2.29	1.80
	Minimum.....	8.45	2.47	.75	12.40	11.17	1.65	2.00	1.54
	All samples up to guarantee.								
	MINDEN COTTON OIL & ICE CO., MINDEN, LA.								
	NORTH LOUISIANA STANDARD.								
52	Guarantee.....	8.00	2.00	1.00	11.00	10.00	1.75	2.12	.50
	Average of analyses.....	8.22	3.27	1.57	13.06	11.49	2.24	2.72	.62
	Maximum.....	9.60	4.50	2.00	13.21	12.10	2.78	3.38	.73
	Minimum.....	7.30	.70	.80	12.30	10.30	1.96	2.37	.50
	All up to guarantee.								
	NEW ORLEANS FERTILIZER AND MANUFACTUR-								
	ING CO., GRETN, LA.								
	BLOOD, BONE AND BEEF.								
15	Guarantee.....	7.00	2.00	2.00	11.00	9.00	1.65	2.00	1.00
	Average of analyses.....	8.50	3.10	1.79	13.39	11.60	1.81	2.19	1.25
	Maximum.....	9.10	3.38	2.25	13.80	12.48	1.91	2.31	1.33
	Minimum.....	7.90	2.81	1.32	12.96	10.71	1.70	2.06	1.16
	All up to guarantee.								
	BLOOD, BONE AND POTASH.								
	Guarantee.....	7.00	2.00	2.00	11.00	9.00	1.65	2.00	1.00

Number of Samples	Name of Manufacturer and Brand	PHOSPHORIC ACID.					Nitrogen	Ammonia	Potash
		Water Sol- uble	Reverted	Insoluble	Total	Available			
136	BLOOD, BONE AND POTASH.— <i>Continued.</i>								
	Average of analyses .....	7.79	3.31	2.93	14.03	11.10	1.87	2.27	1.11
	Maximum .....	8.30	5.23	3.47	17.00	13.53	2.20	2.67	1.26
	Minimum .....	7.50	1.62	2.32	12.54	9.12	1.46	1.77	1.02
	Eighteen samples below guarantee in nitrogen. One hundred and eighteen samples up to or above guarantee.								
2	ECONOMIZER.								
	Guarantee .....	8.00	2.00	2.00	12.00	10.00	1.65	2.00	2.00
	Average of analyses .....	4.82	3.69	1.45	9.96	8.51	2.46	2.99	3.11
	Two samples below guarantee in available phosphoric acid.								
	GOLD DUST.								
170	Guarantee .....	7.00	2.00	2.00	11.00	9.00	1.65	2.00	1.00
	Average of analyses .....	8.78	3.47	2.81	15.06	12.25	1.48	1.80	1.33
	Maximum .....	9.58	3.66	3.00	15.80	12.80	1.76	2.13	1.67
	Minimum .....	8.25	3.22	2.56	14.65	11.78	1.01	1.22	1.09
	Seventy-one samples below guarantee in nitrogen. Ninety-nine samples up to or above guarantee.								
137	GOLDSMITH'S IMPROVED MIXTURE.								
	Guarantee .....	7.00	2.00	2.00	11.00	9.00	1.65	2.00	1.00
	Average of analyses .....	8.02	2.84	3.44	14.30	10.86	1.93	2.34	1.13
	Maximum .....	8.12	2.86	3.80	14.78	10.98	1.97	2.39	1.55
	Minimum .....	7.92	2.82	3.08	13.82	10.74	1.88	2.28	.70
	Seventeen samples below guarantee in potash. One hundred and twenty samples up to or above guarantee.								

PLANTERS FERTILIZER & MANUFACTURING CO.,  
NEW ORLEANS, LA.

PLANTERS COTTON AND CORN.

55	Guarantee.....	6.50	2.50			9.00	1.65	2.00	1.00
	Average of analyses.....	6.87	2.69	1.25	10.81	9.56	1.60	1.94	1.93
	Maximum.....	7.25	2.93	1.62	11.80	10.18	1.69	2.05	2.03
	Minimum.....	6.25	2.35	.87	9.91	9.04	1.45	1.76	1.86
	Five samples below guarantee in nitrogen.								
	Fifty samples up to or above guarantee.								

PLANTERS COTTON AND CORN NO. 1.

17	Guarantee.....	6.50	2.50			9.00	1.65	1.09	1.00
	Average of analyses.....	7.10	2.95	1.06	11.11	10.05	1.58	1.92	2.10
	Maximum.....	7.95	3.10	1.25	12.30	11.05	1.65	2.00	2.16
	Minimum.....	6.25	2.79	.87	9.91	9.04	1.50	1.82	2.03
	Sixteen samples below guarantee in nitrogen.								
	One sample up to or above guarantee.								

PLANTERS COTTON AND CORN NO. 2.

1	Guarantee.....	6.50	2.50			9.00	1.65	2.00	1.00
	Analysis.....	6.25	3.31	1.19	10.75	9.56	1.33	1.61	2.00
	Below guarantee in nitrogen.								

PLANTERS 9-2-1.

8	Guarantee.....					9.00	1.65	2.00	1.00
	Average of analyses.....	6.25	2.79	.87	9.91	9.04	1.65	2.00	2.03
	All samples up to guarantee.								

PRIVATE FORMULA.

1	Guarantee.....					7.00	2.47	3.00	6.00
	Analysis.....	5.50	3.19	1.19	9.88	8.69	2.65	3.22	6.76
	Up to guarantee.								

SPECIAL FORMULA.

2	Guarantee (not given).....								
	Average of analyses.....	8.55	2.28	1.90	12.73	10.83	3.98	4.84	3.31

Number of Samples	Name of Manufacturer and Brand	PHOSPHORIC ACID					Nitrogen	Ammonia	Potash
		Water Sol- uble	Reverted	Insoluble	Total	Available			
137	PLANTERS FERTILIZER & MANFG. CO.— <i>Continued.</i>								
	STUBBS' COTTON AND CORN.					7.00	1.65	2.00	2.00
	<i>Guarantee</i> .....								
	Average of analyses .....	6.25	2.49	1.23	9.97	8.74	1.67	2.02	2.54
	Maximum .....	7.30	2.87	1.69	11.05	9.36	1.94	2.35	2.74
	Minimum .....	5.20	2.06	.87	9.20	8.07	1.49	1.81	2.16
	Twelve samples below guarantee in nitrogen. One hundred and twenty-five samples up to or above guar- antee.								
1	SUPERPHOSPHATE.					9.00	1.65	2.00	1.00
	<i>Guarantee</i> .....								
	Analysis .....	6.25	3.93	1.00	11.18	10.18	1.81	2.25	1.75
3	Up to guarantee.								
	VEGETABLE.					7.00	2.47	3.00	3.00
	<i>Guarantee</i> .....								
	Average of analyses .....	5.45	2.30	1.25	9.00	7.75	2.01	2.44	3.12
37	Three samples below guarantee in nitrogen.								
	RUSTON OIL MILL & FERTILIZER CO., RUSTON, LA.								
	COTTON KING.					8.00	1.75	2.12	2.00
	<i>Guarantee</i> .....	6.00	2.00	1.00	9.00				
	Average of analyses .....	8.15	3.77	.95	12.87	11.92	1.90	2.30	.87
	Maximum .....	9.35	4.57	1.45	14.63	13.92	2.14	2.60	1.40
	Minimum .....	7.51	2.95	.68	11.97	10.55	1.63	1.98	.42
Two samples below guarantee in both nitrogen and potash, and 35 samples below guarantee in potash.									



## SHREVEPORT FERTILIZER CO., SHREVEPORT, LA.

## CADDO CORN.

13	Guarantee.....	4.00	2.00	1.00	7.00	6.00	2.88	3.50	1.00
	Average of analyses.....	4.25	2.61	.79	7.65	6.86	2.64	3.21	1.20
	Maximum.....	4.57	2.83	.82	8.22	7.40	2.76	3.35	1.35
	Minimum.....	3.92	2.38	.75	7.05	6.30	2.52	3.06	1.04
Thirteen samples below guarantee in nitrogen.									

## CADDO COTTON.

173	Guarantee.....	6.00	2.00	1.00	9.00	8.00	2.06	2.50	1.00
	Average of analyses.....	5.52	2.61	.88	9.01	8.13	2.20	2.67	1.17
	Maximum.....	6.25	3.12	1.50	9.75	8.71	2.81	3.31	1.41
	Minimum.....	4.83	1.77	.40	8.01	7.26	1.88	2.28	1.00

Forty-five samples below guarantee in nitrogen and forty  
below guarantee in available phosphoric acid.

Eighty-eight samples up to or above guarantee.

## CADDO SPECIAL.

2	Guarantee.....	4.00	2.00	1.00	7.00	6.00	2.47	3.00	7.00
	Average of analyses.....	5.33	1.88	.68	7.89	7.21	2.73	3.32	4.51
One sample below guarantee in nitrogen and potash, and one below in potash.									

## CADDO VEGETABLE.

3	Guarantee.....	6.00	2.00	1.00	9.00	8.00	3.30	4.00	4.00
	Average of analyses.....	5.27	3.15	.62	9.04	8.42	3.63	4.41	3.40
	Maximum.....	6.60	3.66	.78	10.16	9.66	4.50	5.47	4.40
	Minimum.....	4.40	2.73	.50	7.70	7.13	3.06	3.71	1.76

One sample below guarantee in nitrogen, available phos-  
phoric acid and potash.

Two samples up to or above guarantee.

## CORN AND VEGETABLE.

54	Guarantee.....	4.00	2.00	1.00	7.00	6.00	2.88	3.50	1.00
	Average of analyses.....	4.26	2.55	.71	7.52	6.81	2.73	3.32	1.10
	Maximum.....	4.95	2.92	.82	8.43	7.87	2.82	3.42	1.35
	Minimum.....	3.92	2.02	.56	7.05	6.30	2.31	2.80	.63

Fifty samples below guarantee in nitrogen and four sam-  
ples below guarantee in nitrogen and potash.



Number of Samples	Name of Manufacturer and Brand	PHOSPHORIC ACID.					Nitrogen	Ammonia	Potash
		Water Sol- uble	Reverted	Insoluble	Total	Available			
7	SHREVEPORT FERTILIZER CO.— <i>Continued.</i>								
	STAR.								
	<i>Guarantee</i> .....	8.00	2.00	1.00	11.00	10.00	1.65	2.00	2.00
	Average of analyses.....	7.67	2.96	1.02	11.65	10.63	1.90	2.30	1.15
	Maximum.....	8.43	3.16	1.44	12.50	11.06	2.07	2.52	1.67
559	Minimum.....	6.84	2.63	.78	10.78	10.00	1.68	2.04	.85
	Seven samples below guarantee in potash.								
	STANDARD GUANO & CHEMICAL MANUFACTURING CO., NEW ORLEANS, LA.								
	AMMONIATED RAW BONE SUPERPHOSPHATE.								
	<i>Guarantee</i> .....	4.00	5.00			9.00	1.65	2.00	1.50
49	Average of analyses.....	6.60	3.89	2.34	12.83	10.49	1.75	2.12	1.85
	Maximum.....	6.85	4.46	4.77	14.95	11.31	1.88	2.28	2.36
	Minimum.....	6.40	3.20	.86	11.30	10.00	1.52	1.84	1.28
	Two hundred and forty-six samples below guarantee in nitrogen and potash.								
	Two hundred and thirteen samples up to or above guarantee.								
49	BLOOD, BONE AND MEAT.								
	<i>Guarantee</i> .....	4.00	4.74			8.74	1.70	2.06	2.00
	Average of analyses.....	6.78	3.70	2.53	13.01	10.48	1.88	2.28	2.17
	Maximum.....	6.98	3.98	3.36	13.63	10.93	2.44	2.97	2.64
	Minimum.....	6.40	3.22	1.52	12.40	9.62	1.45	1.76	1.67
	Twenty-three samples below guarantee in nitrogen and potash.								
	Twenty-six samples up to or above guarantee.								

## CABBAGE.

11	Guarantee.....	4.00	5.00			9.00	3.00	3.64	5.00
	Average of analyses.....	6.26	3.21	1.47	10.94	9.47	3.19	3.87	5.74
	Maximum.....	6.56	3.56	1.50	11.03	9.53	3.25	3.94	5.91
	Minimum.....	5.97	2.86	1.43	10.85	9.42	3.12	3.78	5.56

All samples up to guarantee.

## CHAMPION FARMERS CHOICE.

224	Guarantee.....	4.00	4.00			8.00	1.65	2.00	1.50
	Average of analyses.....	6.60	3.73	1.70	12.03	10.33	1.84	2.23	2.14
	Maximum.....	7.20	4.27	3.25	13.90	11.04	2.10	2.55	2.70
	Minimum.....	5.90	3.31	.91	10.12	9.21	1.65	2.00	1.68

All samples up to guarantee.

## GARIG &amp; WILSON RAW BONE SUPERPHOSPHATE.

1	Guarantee.....					9.00	1.65	2.00	1.00
	Analysis.....	7.68	2.82	1.60	12 10	10.50	1.47	1.79	1.76

Below guarantee in nitrogen.

## HIGH GRADE SUGAR.

29	Guarantee.....	7.00	3.00	1.00	11.00	10.00	2.50	3.04	2.00
	Average of analyses.....	9.71	3.01	1.99	14.71	12.72	2.78	3.38	2.47
	Maximum.....	10.39	3.94	4.40	17.34	13.17	3.08	3.74	2.90
	Minimum.....	9.00	2.59	.77	13.37	12.26	2.40	2.92	1.41

Twenty-four samples below guarantee in nitrogen and potash.

Five samples up to or above guarantee.

## MISSISSIPPI HOME GUANO.

52	Guarantee.....	4.00	5.00			9.00	1.65	2.00	2.00
	Average of analyses.....	7.97	3.98	1.76	13.71	11.95	1.67	2.02	2.62
	Maximum.....	8.55	4.78	1.79	13.92	12.13	1.73	2.10	3.10
	Minimum.....	6.93	3.58	1.73	13.44	11.71	1.54	1.87	2.34

Twenty-four samples below guarantee in nitrogen.

Twenty-eight samples up to or above guarantee.

## MISSISSIPPI HOME GUANO.

6	Guarantee.....	7.00	2.00			9.00	1.65	2.00	1.00
	Average of analyses.....	7.01	3.74	5.13	15.88	10.75	1.23	1.47	1.06

Six samples below guarantee in nitrogen.

Number of Samples	Name of Manufacturer and Brand	PHOSPHORIC ACID.					Nitrogen	Ammonia	Potash
		Water Sol- uble	Reverted	Insoluble	Total	Available			
	STANDARD GUANO & CHEMICAL MFG. CO.— <i>Continued.</i>								
	MCCALL'S FORMULA.								
	<i>Guarantee</i> .....	3.75	1.25			5.00	3.85	4.67	1.00
20	Average of analyses .....	4.72	2.72	1.69	9.13	7.44	4.15	5.04	1.42
	Maximum .....	4.96	2.77	2.75	10.48	7.73	4.63	5.63	1.83
	Minimum .....	4.48	2.67	.63	7.78	7.15	3.69	4.48	1.01
	Fifteen samples below guarantee in nitrogen.								
	Five samples up to or above guarantee.								
	ORANGE TREE.								
	<i>Guarantee</i> (not given) .....								
1	Analysis .....				21.90		3.15	3.75	3.16
	STANDARD AMMONIATED SOLUBLE GUANO.								
	<i>Guarantee</i> .....	4.00	4.00			8.00	1.65	2.00	1.50
4	Average of analyses .....	6.40	4.34	3.15	13.89	10.74	1.69	2.05	1.58
	All samples up to guarantee.								
	VEGETABLE.								
	<i>Guarantee</i> .....	4.00	2.00			6.00	3.00	3.64	5.00
26	Average of analyses .....	6.12	3.33	1.53	10.98	9.45	3.00	3.64	5.12
	Maximum .....	6.63	3.51	1.60	11.67	10.14	3.63	4.41	5.73
	Minimum .....	5.72	3.21	1.46	10.60	9.00	2.37	2.88	3.90
	Four samples below guarantee in nitrogen and phosphoric acid.								
	Twenty-two samples up to or above guarantee								

SWIFT & CO., EAST ST. LOUIS, ILL., AND NATIONAL STOCK YARDS, ILL.									
COMPLETE FERTILIZER.									
	Guarantee.....					8.00	4.12	5.00	2.00
9	Average of analyses.....	6.06	4.05	1.90	11.57	9.67	4.51	5.48	2.02
	All samples up to guarantee.								
MIXED FERTILIZER.									
	Guarantee.....					10.00	2.47	3.00	2.00
1	Analysis.....	8.60	3.73	1.89	14.22	12.33	2.94	3.57	2.53
	Up to guarantee.								
SWIFT FERTILIZER WORKS, ATLANTA, GA.									
COTTON PLANT.									
	Guarantee.....	6.00	2.00	1.00	9.00	8.00	1.65	2.00	1.00
7	Average of analyses.....	6.61	3.95	1.91	12.47	10.56	2.00	2.43	1.41
	All samples up to guarantee.								
GOLDEN HARVEST.									
	Guarantee.....	5.00	2.00	1.00	8.00	7.00	1.65	2.00	2.00
2	Average of analyses.....	4.05	3.86	1.48	9.39	7.91	2.55	3.10	2.58
	All samples up to guarantee.								
TENNESSEE CHEMICAL CO., NASHVILLE, TENN.									
OX SLAUGHTER HOUSE BONE.									
	Guarantee.....	6.00	2.00	1.00	9.00	8.00	1.65	2.00	2.00
1	Analysis.....	4.85	4.04	4.16	13.05	8.89	1.65	2.00	2.26
	Up to guarantee.								
VIRGINIA-CAROLINA CHEMICAL CO., MEMPHIS, TENN.									
HIGH GRADE GUANO.									
	Guarantee.....	8.00	2.00	2.00	12.00	10.00	1.65	2.00	1.50
1	Analysis.....	2.27	7.86	2.87	13.00	10.13	1.65	2.00	1.42
	Below guarantee in potash.								

Number of Samples	Name of Manufacturer and Brand	PHOSPHORIC ACID					Nitrogen	Ammonia	Potash
		Water Sol- uble	Reverted	Insoluble	Total	Available			
	VIRGINIA-CAROLINA CHEMICAL CO.— <i>Continued.</i>								
	MOBILE DOUBLE EAGLE.								
1	Guarantee .....					10.00	1.65	2.00	1.50
	Analysis .....	7.92	4.91	.46	13.29	12.83	2.07	2.52	1.38
	Up to guarantee.								
	MOBILE DOUBLE STANDARD.								
3	Guarantee .....					10.00	1.65	2.00	1.50
	Average of analyses .....	7.80	3.95	2.05	13.80	11.75	1.66	2.01	1.37
	Three samples below guarantee in potash.								
	ROYAL AMMONIATED BONE.								
3	Guarantee .....					9.00	1.65	2.00	1.00
	Average of analyses .....	6.05	3.84	1.88	11.77	9.89	1.91	2.31	1.11
	All samples up to guarantee.								
	ROYAL ANIMAL BONE.								
2	Guarantee .....	7.00	2.00	2.00	11.00	9.00	1.65	2.00	1.00
	Average of analyses .....	5.97	4.14	2.39	12.50	10.11	1.40	1.70	1.23
	Two samples below guarantee in nitrogen.								
	ROYAL BLOOD AND BONE.								
3	Guarantee .....					9.00	1.65	2.00	1.00
	Average of analyses .....	7.81	2.77	3.19	13.77	10.58	1.42	1.72	1.07
	Three samples below guarantee in nitrogen.								
	ROYAL BLOOD, BONE AND POTASH.								
	Guarantee .....					9.00	1.65	2.00	1.00



1	Analysis .....	7.20	1.80	1.20	10.20	9.00	1.59	1.93	1.13
	Below guarantee in nitrogen.								
	ROYAL COTTON BOLL.								
	Guarantee .....	6.00	2.00	2.00	10.00	8.00	1.65	2.00	2.00
15	Average of analyses .....	4.68	4.64	1.81	11.13	9.32	1.84	2.23	2.25
	Maximum .....	5.47	7.06	2.69	12.64	10.89	2.12	2.57	2.59
	Minimum .....	3.83	3.38	1.31	9.76	8.16	1.61	1.95	1.83
	Four samples below guarantee in nitrogen and potash. Eleven samples up to or above guarantee.								
	ROYAL FRUIT GROWER.								
	Guarantee .....	6.00	2.00	2.00	10.00	8.00	2.47	3.00	5.00
1	Analysis .....	3.53	2.22	.67	6.42	5.75	3.37	4.09	6.05
	Below guarantee in available phosphoric acid.								
	ROYAL HIGH GRADE GUANO.								
	Guarantee .....	8.00	2.00	2.00	12.00	10.00	1.65	2.00	1.50
10	Average of analyses .....	8.03	4.03	1.56	13.62	12.06	1.56	1.89	1.44
	Maximum .....	9.20	4.65	2.70	16.55	13.85	2.12	2.57	1.96
	Minimum .....	7.45	3.30	.50	12.16	10.80	1.01	1.22	1.04
	Two samples below guarantee in nitrogen and potash. Eight samples up to or above guarantee.								
	ROYAL VEGETABLE GROWER.								
	Guarantee .....	6.00	2.00	2.00	10.00	8.00	2.47	3.00	4.00
2	Average of analyses .....	6.78	3.39	1.81	11.98	10.17	2.15	2.61	3.24
	One sample below guarantee in nitrogen and potash and one sample below guarantee in potash.								
	SCOTT'S GOSSYPIUM PHOSPHO.								
	Guarantee .....	8.00	2.00	2.00	12.00	10.00	1.65	2.00	1.50
63	Average of analyses .....	7.09	3.76	1.20	12.05	10.85	1.85	2.24	1.66
	Maximum .....	7.70	4.47	2.00	12.55	11.61	2.02	2.45	1.80
	Minimum .....	6.00	3.07	.91	11.72	10.20	1.70	2.06	1.57
	All samples up to guarantee.								

Number of Samples	Name of Manufacturer and Brand	PHOSPHORIC ACID.					Nitrogen	Ammonia	Potash
		Water Sol- uble	Reverted	Insoluble	Total	Available			
	VIRGINIA-CAROLINA CHEMICAL CO.— <i>Continued.</i>								
	SCOTT'S MEAL FORMULA.								
1	<i>Guarantee.</i> .....					9.00	1.65	2.00	1.00
	Analysis .....	8.20	2.28	3.02	13.50	10.48	1.71	2.07	1.87
	Up to guarantee.								
	SCOTT'S STATE STANDARD								
6	<i>Guarantee</i> .....	6.00	2.00	2.00	10.00	8.00	1.65	2.00	2.00
	Average of analyses .....	7.14	2.87	1.14	11.15	10.11	1.62	1.97	2.04
	Three samples below guarantee in nitrogen.								
	Three samples up to or above guarantee.								

## ACID PHOSPHATES.

Acid phosphates or superphosphates contain only one fertilizing constituent of value, viz.: phosphoric acid, but this ingredient is almost invariably present in three forms. Fertilizers of this class are made by treatment of bone ash, bone black, natural phosphates, coprolites, etc., with sulphuric acid. The phosphoric acid in these instances is combined with lime in the proportion of one part of phosphoric acid to three of lime. In this combination it is soluble only in acids. By treatment of the rock with sulphuric acid two parts of the lime are removed, leaving one part of phosphoric acid in combination with one part of lime, and in this form the phosphoric acid is readily soluble in water, and hence usually styled "soluble phosphoric acid." There is also formed simultaneously two parts of sulphate of lime (gypsum), which necessarily constitutes about one-half the weight of every acid phosphate made by this process. In England, where sulphuric acid is cheap, and where only the soluble form of phosphoric acid is recognized, acid phosphates yield upon analysis almost entirely soluble phosphoric acid. In this country, where sulphuric acid is dearer, and the reverted gives equal value with the soluble, acid phosphates contain all three forms of phosphoric acid. The change is brought about in the following manner: At the time of manufacture an amount of sulphuric acid insufficient to render soluble all of the phosphoric acid present is used, thus leaving in the mass some insoluble phosphates. This mass, containing both soluble and insoluble phosphates, is permitted to remain in bulk, and in the course of time a reaction takes place, which results in the formation of reverted phosphates. This reaction may be explained as follows: The phosphoric acid with one part of lime acts upon the phosphoric acid with three parts of lime, forming two molecules of phosphoric acid with two parts of lime. Therefore nearly every American acid phosphate contains all three forms of phosphoric acid. There are high grade acid phosphates on the market which are made by the action of phosphoric acid upon bone, ash and rock phosphates.

The following were analyzed :

Number of Samples.	Name of Manufacturer and Brand.	PHOSPHORIC ACID.				
		Water Sol- uble	Reverted	Insoluble	Total	Available
	HAZLEHURST OIL MILL & FERTILIZER CO., HAZLEHURST. MISS.					
	ACID PHOSPHATE.					
1	Guarantee .....	10.00	2.00	1.50	13.50	12.00
	Analysis .....	11.80	4.68	1.72	18.20	16.48
	Up to guarantee.					
	JACKSON FERTILIZER CO., JACKSON, MISS.					
	ACID PHOSPHATE.					
6	Guarantee .....					14.00
	Average of analyses .....	13.15	3.41	1.65	18.21	16.56
	All samples up to guarantee.					
	HIGH GRADE ACID PHOSPHATE.					
1	Guarantee .....					12.00
	Analysis .....	10.80	4.91	1.14	16.85	15.71
	Up to guarantee.					
	MERIDIAN FERTILIZER FACTORY, MERIDIAN, MISS.					
	SOUTHERN ACID PHOSPHATE.					
21	Guarantee .....	12.00	2.00	1.00	15.00	14.00
	Average of analyses. ....	12.25	3.63	.98	16.86	15.88
	Maximum .....	12.58	4.40	2.54	18.60	16.70
	Minimum .....	11.80	2.94	.30	15.04	14.74
	All samples up to guarantee.					

# MINDEN COTTON OIL & ICE CO., MINDEN, LA.

## HIGH GRADE ACID PHOSPHATE.

9	Guarantee.....					
	Average of analyses.....	13.41	3.98	.59	17.98	12.00
	All samples up to guarantee.					17.39

# NEW ORLEANS ACID & FERTILIZER CO., GRETN, LA.

## BLACK DIAMOND ACID PHOSPHATE.

98	Guarantee.....	10.00	2.00	2.00	14.00	12.00
	Average of analyses.....	10.16	5.56	1.54	17.26	15.72
	Maximum.....	10.50	6.40	2.39	17.55	16.00
	Minimum.....	9.45	4.56	.65	16.65	15.06
	All samples up to guarantee.					

## CRESCENT CITY ACID PHOSPHATE.

47	Guarantee.....	10.00	2.00	2.00	14.00	12.00
	Average of analyses.....	12.27	3.39	2.87	18.53	15.66
	Maximum.....	12.38	3.80	3.02	18.90	16.18
	Minimum.....	12.15	2.98	2.72	18.15	15.13
	All samples up to guarantee.					

# PLANTERS FERTILIZER & MANUFACTURING CO., NEW ORLEANS, LA.

## ACID PHOSPHATE.

18	Guarantee.....					1.00
	Average of analyses.....	11.45	3.51	2.39	17.35	14.96
	All samples up to guarantee.					

## ACID PHOSPHATE.

1	Guarantee.....					16.00
	Analysis.....	12.10	4.48	2.15	18.73	16.58
	Up to guarantee.					

## ENGLISH ACID PHOSPHATE.

2	Guarantee.....					13.00
	Average of analyses.....	14.80	3.19	2.16	20.15	17.99
	Up to guarantee.					



Number of Samples	Name of Manufacturer and Brand	PHOSPHORIC ACID.				
		Water Sol- uble	Reverted	Insoluble	Total	Available
160	STANDARD GUANO & CHEMICAL MANUFACTURING CO., NEW ORLEANS, LA.					
	ACID PHOSPHATE.					
	Guarantee.....	10.00	2.00			12.00
	Average of analyses.....	13.66	5.14	1.66	20.46	18.80
	Maximum.....	15.85	6.48	2.72	21.60	20.10
1	Minimum.....	12.20	4.08	1.10	19.78	17.46
	All samples up to guarantee.					
	SHREVEPORT FERTILIZER CO., SHREVEPORT, LA.					
	ACID PHOSPHATE.					
	Guarantee.....					14.00
9	Analysis.....	13.10	2.99	1.48	18.07	16.59
	Up to guarantee.					
	ACID PHOSPHATE.					
	Guarantee.....					16.00
	Average of analyses.....	13.12	4.25	1.94	19.31	17.37
1	One sample below guarantee.					
	Eight samples up to or above guarantee.					
	VIRGINIA-CAROLINA CHEMICAL CO., MEMPHIS, TENN.					
	ACID PHOSPHATE.					
	Guarantee (not given).....					
1	Analysis.....	13.75	3.66	1.24	18.65	17.41

## I. X, L. ACID PHOSPHATE.

1	Guarantee.....					14.00
	Analysis.....	11.40	2.80	1.05	15.25	14.20
	Up to guarantee.					

## ROYAL ACID PHOSPHATE.

8	Guarantee.....					14.00
	Average of analyses.....	11.30	4.09	2.71	18.10	15.39
	One sample below guarantee.					
	Seven samples up to or above guarantee.					

## ROYAL BONE SUPERPHOSPHATE.

2	Guarantee.....					15.00
	Average of analyses.....	12.00	4.93	.97	17.90	16.93
	All samples up to guarantee.					

## SCOTT'S HIGH GRADE ACID PHOSPHATE.

20	Guarantee.....					14.00
	Average of analyses.....	12.70	4.25	1.61	18.56	16.95
	Maximum.....	15.70	4.52	2.52	22.67	20.15
	Minimum.....	9.80	3.78	.62	16.00	14.32
	All samples up to guarantee.					

## V.-C. SUPERPHOSPHATE.

1	Guarantee.....					16.00
	Analysis.....	14.00	2.93	1.62	18.55	16.93
	Up to guarantee.					

## V.-C. SUPERPHOSPHATE AND KAINIT.

1	Guarantee.....					12.00
	Analysis.....	12.90	6.00	1.00	19.90	18.90
	Up to guarantee; no potash present nor guaranteed.					

## FERTILIZERS CONTAINING PHOSPHORIC ACID AND POTASH.

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The past season a few fertilizers containing only available phosphoric acid and potash were sold in the State. The following were analyzed:

Number of Samples	Name of Manufacturer and Brand	PHOSPHORIC ACID.					Potash
		Water Sol- uble	Reverted	Insoluble	Total	Available	
2	PLANTERS FERTILIZER & MANUFACTURING CO., NEW ORLEANS, LA. RICE FERTILIZER.						
	<i>Guarantee</i> .....					10.00	3.00
	Average of analyses..... Two samples below guarantee in potash.	8.78	2.57	.78	12.13	10.35	2.57
39	NEW ORLEANS ACID AND FERTILIZER CO., GRETN, LA. DISSOLVED BONE AND POTASH.						
	<i>Guarantee</i> .....	8.00	2.00	2.00	12.00	10.00	2.00
	Average of analyses..... All samples up to guarantee.	9.80	3.53	2.87	16.20	13.33	3.32
1	STANDARD GUANO & CHEMICAL MANUFACTURING CO., NEW ORLEANS, LA. ACID PHOSPHATE AND KAINIT.						
	<i>Guarantee (not given)</i> .....						
	Analysis.....	8.40	4.56	1.63	14.59	12.96	2.60
1	DISSOLVED BONE AND POTASH.						
	<i>Guarantee (not given)</i> ..... Analysis.....	7.31	3.71	1.68	12.70	11.02	4.00

Number of Samples	Name of Manufacturer and Brand	PHOSPHORIC ACID.					Potash
		Water Sol- uble	Reverted	Insoluble	Total	Available	
	SWIFT FERTILIZER WORKS, ATLANTA, GA.						
	FARMERS HOME.						
1	Guarantee.....	8.00	2.00	1.00	11.00	10.00	4.00
	Analysis.....	6.51	5.81	.82	13.14	12.32	4.50
	Up to guarantee.						
	FIELD AND FARM.						
1	Guarantee.....	7.00	2.00	1.00	10.00	9.00	2.00
	Analysis.....	5.09	5.06	1.66	11.81	10.15	2.31
	Up to guarantee.						
	VIRGINIA-CAROLINA CHEMICAL CO., MEMPHIS, TENN.						
	CAPITAL BONE AND POTASH COMPOUND.						
3	Guarantee.....					10.00	2.00
	Average of analyses.....	2.80	7.80	1.70	12.30	10.60	1.86
	Three samples below guarantee in potash.						
	C. B. O. COMPOUND.						
1	Guarantee.....					10.00	2.00
	Analysis.....	9.05	3.56	.51	13.12	12.61	2.71
	Up to guarantee.						
	ROYAL COMPOUND.						
	Guarantee.....					10.00	2.00



10	Average of analyses .....	7.87	3.73	2.65	14.25	11.60	2.05
	All samples up to guarantee.						
	ROYAL GRAIN GROWER.						
	<i>Guarantee</i> .....					10.00	4.00
1	Analysis .....	8.42	2.90	1.82	13.14	11.32	4.00
	Up to guarantee.						

## COTTON SEED MEAL.

This, to the Southern farmer, is the cheapest and most easily obtainable form of nitrogen. Although it has acquired an extensive use as a fertilizer throughout the whole State, it has been exempted from the operations of the fertilizer law by virtue of its employment as a feeding stuff.\*

On account of the presence of quite appreciable quantities of hulls in many samples of meal found upon the market, it is very essential that great care should be observed in the purchase of this article. Hulls can easily be detected by the non-homogeneous appearance of the meal containing them, and also by passing a small quantity of the meal through an ordinary sifter.

The best undamaged meal has a bright yellow color and is dry and pulverulent.

The damaged meal is invariably darker in color, and though rendered unfit for use as a feed stuff, does not lose any of its value for fertilizing purposes.

Frequent requests are made for the comparative values of cotton seed meal, cotton seed and cotton seed hulls. To furnish a basis for comparison, the analyses of average samples of cotton seed, cotton seed meal, and cotton seed hulls, are here given and their valuation per ton by the tariff of prices given on page —.

## ANALYSES.

	Nitrogen.	Phosphoric Acid.	Potash.	Value Per Ton.
Cotton seed .....	3.007	1.3	1.2	\$12.12
Cotton seed meal.....	7.007	3.0	2.0	27.42
Cotton seed hulls.....	.707	.25	1.0	3.37

\* Note—By amending act published elsewhere in this Bulletin cotton seed meal sold for fertilizing purposes is now subject to provisions of the fertilizer law.

These are values for fertilizing purposes only and have no reference to feeding value.

The average analysis of ashes of cotton seed hulls will show 9.17 phosphoric acid and 23.47 potash. With these comparative values a farmer can decide from prevailing prices of seed, meal and hulls whether it is expedient to sell his seed and buy meal and hulls or to use them as fertilizer.

The following analyses of cotton seed meals were made:

Number of Samples	Name of Manufacturer and Brand	Nitrogen	Ammonia
7	ARCADIA COTTON OIL MILL & MANUFACTURING CO., ARCADIA, LA.		
	Guarantee.....	7.50	9.11
	Average of analyses.....	7.59	9.22
	All samples up to guarantee.		
8	ARKANSAS COTTON OIL CO., PINE BLUFF, ARK.		
	Guarantee.....	6.59	8.00
	Average of analyses.....	7.11	8.63
	All samples up to guarantee.		
1	ARKANSAS COTTON OIL CO., LITTLE ROCK, ARK.		
	Guarantee.....	6.59	8.00
	Analysis.....	6.59	8.00
	Up to guarantee.		
28	BREAUX BRIDGE OIL WORKS, BREAUX BRIDGE, LA.		
	Guarantee.....	6.55	7.95
	Average of analyses.....	7.38	8.96
	Maximum.....	7.56	9.18
	Minimum.....	6.98	8.47
	All samples up to guarantee.		
1	CLINTON OIL & MANUFACTURING CO., CLINTON, LA.		
	Guarantee.....	6.59	8.00
	Analysis.....	6.85	8.32
	Up to guarantee.		
18	CAPITAL CITY OIL MILL CO., BATON ROUGE, LA.		
	Guarantee.....	6.00	7.29
	Average of analyses.....	6.92	8.40
	Maximum.....	6.95	8.44
	Minimum.....	6.89	8.37
	All samples up to guarantee.		
2	DALLAS COTTON OIL CO., DALLAS, TEX.		
	Guarantee.....	6.00	7.29
	Average of analyses.....	6.78	8.24
	All samples up to guarantee.		
1	FARMERS COTTON OIL CO., CLEBURNE, TEX.		
	Guarantee.....	6.59	8.00
	Analysis.....	8.07	9.80
	Up to guarantee.		

Number of Samples	Name of Manufacturer and Brand	Nitrogen	Ammonia
	FELICIANA OIL MILL, ST. FRANCISVILLE, LA.		
	<i>Guarantee</i> .....	6.00	7.29
3	Average of analyses .....	7.04	8.55
	All samples up to guarantee.		
	GRAND ECORE COTTON OIL CO., NATCHITOCHEs, LA.		
	<i>Guarantee</i> .....	6.00	7.29
2	Average of analyses .....	6.73	8.18
	All samples up to guarantee.		
	HAZLEHURST OIL MILL & FERTILIZER CO., HAZLEHURST, MISS.		
	<i>Guarantee</i> .....	6.59	8.00
1	Analysis .....	7.26	8.81
	Up to guarantee.		
	HOMER COTTON OIL CO., HOMER, LA.		
	<i>Guarantee</i> .....	6.00	7.29
31	Average of analyses .....	7.24	8.79
	Maximum .....	7.38	8.96
	Minimum .....	7.14	8.67
	All samples up to guarantee.		
	JACKSON FERTILIZER CO., JACKSON, MISS.		
	<i>Guarantee</i> .....	6.25	7.59
1	Analysis .....	7.04	8.55
	Up to guarantee.		
	MINDEN COTTON OIL & ICE CO., MINDEN, LA.		
	<i>Guarantee</i> .....	7.00	8.50
32	Average of analyses .....	7.34	8.91
	Maximum .....	7.67	9.32
	Minimum .....	6.83	8.30
	One sample below guarantee.		
	Thirty-one samples up to or above guarantee.		
	MISSISSIPPI COTTON OIL CO., NATCHEZ, MISS.		
	<i>Guarantee</i> .....	6.59	8.00
22	Average of analyses .....	6.77	8.23
	Maximum .....	7.04	8.55
	Minimum .....	6.59	8.00
	All samples up to guarantee.		
	MISSISSIPPI COTTON OIL CO., GREENVILLE, MISS.		
	<i>Guarantee</i> .....	6.59	8.00
1	Analysis .....	6.49	7.89
	Below guarantee.		



Number of Samples	Name of Manufacturer and Brand	Nitrogen	Ammonia
<b>NEW IBERIA MILLING &amp; DEVELOPMENT CO., LTD., NEW IBERIA, LA.</b>			
39	<i>Guarantee</i> .....	6.00	7.29
	Average of analyses .....	7.51	9.12
	Maximum .....	7.67	9.32
	Minimum .....	7.35	8.93
	All samples up to guarantee.		
1	<i>Guarantee</i> .....	5.00	6.07
	Analysis .....	5.67	6.89
	Up to guarantee.		
<b>NEW ORLEANS ACID &amp; FERTILIZER CO., GRETN, LA.</b>			
1	<i>Guarantee</i> .....	6.00	7.29
	Analysis .....	6.72	8.16
	Up to guarantee.		
<b>NEW ORLEANS COTTON SEED OIL &amp; MANU- FACTURING CO., LTD., NEW ORLEANS, LA.</b>			
9	<i>Guarantee</i> .....	6.59	8.00
	Average of analyses .....	6.43	7.82
	Seven samples below guarantee.		
	Two samples up to or above guarantee.		
<b>PEOPLE'S COTTON OIL CO., LAFAYETTE, LA.</b>			
21	<i>Guarantee</i> .....	7.40	8.98
	Average of analyses .....	7.60	9.23
	Maximum .....	7.78	9.45
	Minimum .....	7.50	9.10
	All samples up to guarantee.		
<b>PLANTERS OIL MILL, MONROE, LA.</b>			
55	<i>Guarantee</i> .....	6.59	8.00
	Average of analyses .....	7.31	8.87
	Maximum .....	7.56	9.18
	Minimum .....	7.00	8.50
	All samples up to guarantee.		
<b>RACCOURCI COTTON OIL CO., BATCHELOR, LA.</b>			
2	<i>Guarantee</i> .....	6.59	8.00
	Average of analyses .....	6.39	7.76
	Two samples below guarantee.		
<b>RED RIVER OIL CO., ALEXANDRIA, LA.</b>			
21	<i>Guarantee</i> .....	6.17	7.50
	Average of analyses .....	6.10	8.65

Number of Samples	Name of Manufacturer and Brand	Nitrogen	Ammonia
	RED RIVER OIL CO., ALEXANDRIA.— <i>Continued</i>		
	Maximum.....	6.66	8.09
	Minimum.....	5.66	6.87
	One sample below guarantee.		
	Twenty samples up to or above guarantee		
	<i>Guarantee</i> .....	6.59	8.00
33	Average of analyses.....	6.44	7.83
	Maximum.....	7.48	9.08
	Minimum.....	5.83	7.08
	Twenty-eight samples below guarantee.		
	Five samples up to or above guarantee.		
	RUSTON OIL MILLS, RUSTON, LA.		
	<i>Guarantee</i> .....	7.00	8.50
6	Average of analyses.....	7.19	8.83
	Four samples below guarantee.		
	Two samples up to or above guarantee.		
	SHREVEPORT FERTILIZER CO., SHREVE- PORT, LA.		
	<i>Guarantee</i> .....	4.75	5.77
19	Average of analyses.....	4.99	6.06
	Maximum.....	7.00	8.50
	Minimum.....	4.27	5.19
	Seventeen samples below guarantee.		
	Two samples up to or above guarantee.		
	SONIA COTTON OIL CO., ALEXANDRIA, LA.		
	<i>Guarantee</i> .....	6.59	8.00
56	Average of analyses.....	6.40	7.78
	Maximum.....	6.51	7.90
	Minimum.....	6.31	7.66
	Fifty-six samples below guarantee.		
	ST. LANDRY COTTON OIL CO., OPELOUSAS, LA.		
	<i>Guarantee</i> .....	6.59	8.00
104	Average of analyses.....	7.40	8.99
	Maximum.....	7.52	9.13
	Minimum.....	7.10	8.63
	All samples up to guarantee.		
	ST. MARTIN OIL WORKS, ST. MARTINS- VILLE, LA.		
	<i>Guarantee</i> .....	6.59	8.00
27	Average of analyses.....	6.93	8.41
	Maximum.....	7.12	8.64
	Minimum.....	6.71	8.15
	All samples up to guarantee.		

Number of Samples	Name of Manufacturer and Brand	Nitrogen	Ammonia
	SOUTHERN OIL & FERTILIZER CO., MERIDIAN, MISS.		
84	Guarantee.....	4.94	6.00
	Average of analysis.....	6.95	8.46
	Maximum.....	7.00	8.50
	Minimum.....	6.90	8.38
	All samples up to guarantee.		
	TENSAS COTTON OIL CO., ST. JOSEPH, LA.		
4	Guarantee.....	6.00	7.29
	Average of analyses.....	6.44	8.83
	All samples up to guarantee.		
	WASHINGTON COTTON OIL MILL CO., WASHINGTON, LA.		
44	Guarantee.....	6.59	8.00
	Average of analyses.....	7.24	8.79
	Maximum.....	7.56	9.18
	Minimum.....	7.04	8.55
	All samples up to guarantee.		
	UNION OIL CO., BUNKIE, LA.		
37	Guarantee.....	6.18	7.51
	Average of analyses.....	6.57	7.99
	Maximum.....	6.68	8.12
	Minimum.....	6.33	7.69
	All samples up to guarantee.		
38	Guarantee.....	6.59	8.00
	Average of analyses.....	6.53	7.94
	Maximum.....	6.75	8.20
	Minimum.....	6.34	7.70
	Eleven samples below guarantee.		
	Twenty-seven samples up to or above guarantee.		
	UNION OIL CO., GRETN, LA.		
4	Guarantee.....	6.59	8.00
	Average of analyses.....	6.59	8.00
	All samples up to guarantee.		
	UNION OIL CO., SHREVEPORT, LA.		
18	Guarantee.....	6.59	8.00
	Average of analyses.....	6.74	8.19
	Maximum.....	7.16	8.69
	Minimum.....	6.54	7.95
	Five samples below guarantee.		
	Thirteen samples up to or above guarantee.		

Number of Samples	Name of Manufacturer and Brand	Nitrogen	Ammonia
8	UNION OIL CO., TORRAS, LA.		
	<i>Guarantee</i> .....	6.59	8.00
	Average of analyses .....	6.35	7.71
	Eight samples below guarantee.		
11	UNION OIL CO., VIDALIA, LA.		
	<i>Guarantee</i> .....	6.59	8.00
	Average of analyses.....	7.31	8.87
	Maximum .....	7.51	9.12
	Minimum.....	7.20	8.74
	All samples up to guarantee.		
23	UNION OIL CO., WEST MONROE, LA.		
	<i>Guarantee</i> .....	6.59	8.00
	Average of analyses..	6.83	8.34
	Maximum .....	6.86	8.33
	Minimum.....	6.78	8.24
	All samples up to guarantee.		

## TANKAGE.

The fertilizer has grown rapidly in favor since its introduction into this State, and is each year becoming more largely in demand. It consists chiefly of waste products from slaughter houses, and is a mixture of partly cooked bone and meat, deposited in tanks in which the refuse from the butcher is treated to separate the grease. It ordinarily contains good percentages of both nitrogen and phosphoric acid, the proportions of each, in general, varying almost inversely as the quantity of the other. The relative proportions of nitrogen and phosphoric acid having such wide limits of variation, this class of goods, of course, exhibits a corresponding wide range in value for fertilizing uses. When a considerable excess of bone is present, the proportion of phosphoric acid is largely above that of the nitrogen, while with an excess of meat, the contents of nitrogen becomes large and that of phosphoric acid becomes comparatively small. In the latter case, the action of both ingredients has been found to be more satisfactory. The phosphoric acid in the tankage, being derived principally from bone, is chiefly the insoluble form and its value is largely dependent upon the degree of fineness of division of the particles, a well pulverized sample responding more readily to the needs of the plant. Purchasers of fertilizers of this class should always buy upon a guarantee of definite percentages of nitrogen and phosphoric acid, as their varying composition renders almost indispensable a knowledge of the proportions of their constituents. The bone present should also be in a very finely divided condition.

Since tankage is valuable chiefly for the nitrogen or ammonia, care should be taken in buying this fertilizer to secure the highest percentage of this ingredient. Guarantees of 9 per cent ammonia and 20 per cent bone phosphate (which is about equivalent to 9 per cent phosphoric acid) can be secured from any dealer in this class of fertilizers, and no lower content of nitrogen should be bought from an economical standpoint, since



the freight from the Western packing houses to the consumer is the same per ton on all kinds, and the higher the content the cheaper the nitrogen per pound to the consumer when the cost of freight is added.

The following samples were analyzed :

Number of Samples	Name of Manufacturer and Brand	Phosphoric Acid	Nitrogen	Ammonia
5	ARMOUR FERTILIZER WORKS, CHICAGO, ILL., ETC. PLANTERS BEST.			
	Guarantee.....		9.87	12.00
	Average of analyses.....	4.59	10.02	12.17
	One sample below guarantee.			
	Four samples up to or above guarantee.			
5	CRESCENT CITY STOCK YARDS & SLAUGHTER HOUSE CO., NEW ORLEANS, LA. CRESCENT FINISHED FERTILIZER.			
	Guarantee.....		5.88	7.14
	Average of analyses.....	9.05	7.19	8.73
	All samples up to guarantee.			
21	SWIFT & CO., LTD., CHICAGO., ILL., ETC. TANKAGE.			
	Guarantee.....	4.58	5.76	7.00
	Average of analyses.....	6.48	6.35	7.70
	Maximum.....	9.00	9.09	11.04
	Minimum.....	4.00	5.17	6.28
	Four samples below guarantee in nitrogen and one sample below in phosphoric acid.			
4	Sixteen samples up to or above guarantee.			
	Guarantee.....	11.45	5.76	7.00
	Average of analyses.....	11.15	6.74	8.19
	One sample below guarantee in nitrogen and one below in phosphoric acid.			
104	Two samples up to or above guarantee.			
	Guarantee.....	4.58	6.59	8.00
	Average of analyses.....	8.78	6.82	8.28
	Maximum.....	18.75	8.75	10.42
	Minimum.....	4.63	5.15	6.25
	Twenty-two samples below guarantee in nitrogen.			
	Eighty-two samples up to or above guarantee.			

Number of Samples	Name of Manufacturer and Brand	Phosphoric Acid	Nitrogen	Ammonia
	SWIFT & CO., LTD.— <i>Continued.</i>			
8	<i>Guarantee</i> .....	9.16	6.59	8.00
	Average of analyses.....	10.71	6.79	8.25
	All samples up to guarantee.			
66	<i>Guarantee</i> .....	4.58	7.41	9.00
	Average of analyses.....	10.03	7.05	8.56
	Maximum.....	16.27	8.24	10.00
	Minimum.....	4.60	5.89	7.15
	Forty-six samples below guarantee in nitro- gen.			
	Twenty samples up to or above guarantee.			
8	<i>Guarantee</i> .....	6.87	7.41	9.00
	Average of analyses.....	12.16	7.24	8.79
	Six samples below guarantee in nitrogen.			
	Two samples up to or above guarantee.			
42	<i>Guarantee</i> .....	4.58	8.24	10.00
	Average of analyses.....	7.20	8.12	9.86
	Maximum.....	14.70	9.16	11.12
	Minimum.....	5.35	7.41	9.00
	Twenty-one samples below guarantee in nitrogen.			
	Twenty-one samples up to or above guarantee.			
8	<i>Guarantee</i> .....	6.87	8.24	10.00
	Average of analyses.....	6.64	8.33	10.11
	One sample below guarantee in nitrogen and phosphoric acid, one below in nitrogen and four below in phosphoric acid.			
	Two samples up to or above guarantee.			
18	<i>Guarantee</i> .....	4.58	8.65	10.50
	Average of analyses.....	5.75	8.74	10.61
	Maximum.....	6.97	9.41	11.43
	Minimum.....	4.20	8.20	9.95
	Four samples below guarantee in nitrogen and one below in phosphoric acid.			
	Fourteen samples up to or above guarantee.			
5	<i>Guarantee</i> .....	4.58	9.06	11.00
	Average of analyses.....	7.05	8.74	10.61
	Four samples below guarantee in nitrogen.			
	One sample up to guarantee.			
25	<i>Guarantee</i> .....	3.20	9.88	12.00
	Average of analyses.....	5.10	9.44	11.47
	Maximum.....	6.43	10.59	12.86
	Minimum.....	4.40	8.91	10.57
	Twenty-two samples below guarantee in nitrogen.			
	One sample up to guarantee.			

## BONE MEAL.

Bones pulverized to a greater or less degree of fineness are sold as "Bone Meal," "Bone Dust," "Ground Bone," etc., and are extensively used in some countries for fertilizing purposes. They have, as yet, acquired but little favor in the South, and but few brands were on the market this season. As their utility depends largely upon the state of division of their particles, both a mechanical and chemical examination are necessary in determining their value.

In addition to the phosphoric acid found in bone black and bone oil, ground bone contains a good part of nitrogen derived from the gelatinous matter present in the raw substance.

The following were analyzed:

Number of Samples	Name of Manufacturer and Brand	Phosphoric Acid	Nitrogen	Ammonia
4	CRESCENT CITY STOCK YARDS & SLAUGHTER HOUSE CO., NEW ORLEANS, LA.			
	GROUND BONE.			
	Guarantee .....	24.31	3.92	4.75
	Average of analyses .....	23.62	4.07	4.95
	One sample below guarantee in phosphoric acid.			
	Three samples up to or above guarantee.			
3	JACKSON FERTILIZER CO., JACKSON, MISS.			
	BONE MEAL.			
	Guarantee .....	22.93	2.50	3.04
	Average of analyses .....	26.20	3.34	4.05
	All samples up to guarantee.			
5	NEW ORLEANS ACID & FERTILIZER CO., GRETNA, LA.			
	BONE MEAL			
	Guarantee .....	20.00	2.06	2.50
	Average of analyses .....	24.40	3.94	4.78
	All samples up to guarantee.			

Number of Samples	Name of Manufacturer and Brand	Phosphoric Acid	Nitrogen	Ammonia
	NEW ORLEANS ACID & FERTILIZER CO., GRETNA, LA.— <i>Continued.</i>			
	<i>Guarantee</i> .....	18.00	2.06	2.50
6	Average of analyses..... All samples up to guarantee	24.20	3.90	4.73
	STANDARD GUANO & CHEMICAL MANU- FACTURING CO., NEW ORLEANS, LA.			
	FINE GROUND BONE.			
	<i>Guarantee</i> .....	18.50	2.50	3.04
4	Average of analyses..... All samples up to guarantee.	20.71	3.65	4.63
	PURE RAW GROUND BONE.			
	<i>Guarantee</i> .....	18.50	2.50	3.06
261	Average of analyses..... Maximum..... Minimum..... Thirteen samples below guarantee in phos- phoric acid. One hundred and eighty-eight samples up to or above guarantee.	19.22	3.15	3.82
		19.80	3.87	4.70
		17.87	2.60	3.16
	SWIFT & CO., LTD., CHICAGO, ILL., ETC.			
	BONE MEAL.			
	<i>Guarantee</i> .....	25.00	2.47	3.00
15	Average of analyses..... Maximum..... Minimum..... All samples up to guarantee.	27.54	2.54	3.09
		27.80	2.77	3.37
		26.70	2.47	3.00
	GROUND STEAMED BONE.			
	<i>Guarantee</i> .....	25.19	2.47	3.00
1	Analysis..... Below guarantee in nitrogen.	29.07	2.38	2.90

## MISCELLANEOUS FERTILIZERS.

Under this head are included the analyses of fertilizing materials not given in preceding tables. The following were analyzed:

Number of Samples	Name of Manufacturer and Brand	Phosphoric Acid	Nitrogen	Ammonia	Potash
NITRATE OF SODA.					
1	JACKSON FERTILIZER CO., JACKSON, MISS.				
	<i>Guarantee</i> .....		15.00	18.21	
	Analysis.....		16.00	19.43	
	Up to guarantee.				
NEW ORLEANS ACID & FERTILIZER CO., GRETNA, LA.					
2	<i>Guarantee</i> .....		13.18	16.00	
	Average of analyses.....		15.84	19.23	
	All samples up to guarantee.				
STANDARD GUANO & CHEMICAL MANU- FACTURING CO., NEW ORLEANS, LA.					
10	<i>Guarantee (not given)</i> .....				
	Average of analyses.....		16.05	19.49	
KAINIT.					
JACKSON FERTILIZER CO., JACKSON, MISS.					
2	<i>Guarantee</i> .....				12.00
	Average of analyses.....				12.63
	All samples up to guarantee.				
MERIDIAN FERTILIZER FACTORY. MERIDIAN, MISS.					
1	<i>Guarantee</i> .....				12.00
	Analysis.....				12.21
	Up to guarantee.				
NEW ORLEANS ACID & FERTILIZER CO., GRETNA, LA.					
2	<i>Guarantee (not given)</i> .....				
	Average of analyses.....				12.45
SHREVEPORT FERTILIZER CO., SHREVE- PORT, LA.					
	<i>Guarantee</i> .....				12.00



Number of Samples	Name of Manufacturer and Brand	Phosphoric Acid	Nitrogen	Ammonia	Potash
	SHREVEPORT FERTILIZER CO.— <i>Continued.</i>				
2	Average of analyses..... All samples up to guarantee.				12.22
	STANDARD GUANO & CHEMICAL MANU- FACTURING CO., NEW ORLEANS, LA.				
32	<i>Guarantee</i> (not given).....				
	Average of analyses.....				12.71
	Maximum .....				13.30
	Minimum .....				12.32
	VIRGINIA-CAROLINA CHEMICAL CO., MEMPHIS, TENN.				
2	<i>Guarantee</i> .....				12.00
	Average of analyses..... One sample below guarantee. One sample up to guarantee.				11.84
	MURIATE OF POTASH.				
	JACKSON FERTILIZER CO., JACKSON, MISS.				
1	<i>Guarantee</i> .....				50.00
	Analysis..... Up to guarantee.				52.00
	NEW ORLEANS ACID & FERTILIZER CO., GRETNA, LA.				
2	<i>Guarantee</i> .....				50.00
	Average of analysis..... All samples up to guarantee.				51.94
	SHREVEPORT FERTILIZER CO., SHREVE- PORT, LA.				
1	<i>Guarantee</i> .....				50.00
	Analysis..... Up to guarantee.				50.08
	STANDARD GUANO & CHEMICAL MANU- FACTURING CO., NEW ORLEANS, LA.				
9	<i>Guarantee</i> (not given).....				
	Average of analyses.....				50.91
	SULPHATE OF POTASH.				
	NEW ORLEANS ACID & FERTILIZER CO., GRETNA, LA.				
2	<i>Guarantee</i> .....				50.00
	Average of analyses..... Two samples below guarantee.				44.00

Number of Samples	Name of Manufacturer and Brand	Phosphoric Acid	Nitrogen	Ammonia	Potash
	SULPHATE OF POTASH.— <i>Continued.</i>				
	STANDARD GUANO & CHEMICAL MANUFACTURING CO., NEW ORLEANS, LA.				
	<i>Guarantee</i> (not given).....				
4	Average of analyses .....				49.08
	FRUIT TREE.				
	<i>Guarantee</i> (not given).....				
2	Average of analyses .....	20.77	2.95	3.58	3.29
	BARATARIA FISH SCRAP.				
	BARATARIA CANNING CO., BILOXI, MISS.				
	<i>Guarantee</i> .....	4.00	6.80	8.25	
1	Analysis.....	4.77	6.91	8.39	
	Up to guarantee.				

### PARIS GREEN

is largely used in this State as an insecticide, chiefly for the destruction of the cotton caterpillar, whose ravages are frequently so injurious. This chemical consists chiefly of the "Arsenite of Copper," with a small proportion of the Acetate of Copper, and a first-class article should contain not less than 50 per cent of arsenious acid, known in its pure state as white arsenic.

This article is frequently adulterated, and there are abundant opportunities for fraud in its purchase. Farmers and planters frequently complain of the ineffectiveness of Paris Green after use on their cotton; but they failed to take samples in accordance with the above law, and therefore have no means of definitely determining whether fraud has been practiced.

Many farmers and planters in Central Louisiana have made report of the ineffectiveness of the Paris Green used on their cotton during the present season. This is reported after a failure, but they failed to take samples in accordance with the above law, and therefore had no means of ascertaining positively whether fraud had been perpetrated.

The law fully protects every farmer if he will observe it. Before buying, inspect packages and see that "Strictly Pure" and "Guaranteed," with the fac-simile of the signature of the Commissioner of Agriculture and Immigration are stamped on each. If they are, take a sample in accordance with directions of the law, and if after using little or no benefit accrues, have it analyzed by the official chemist, and, if deficient, damages can be recovered. The following samples have been analyzed:

Number of Samples	Name of Manufacturer or Seller	Arsenious Acid
354	I. L. LYONS & CO., NEW ORLEANS.	
	<i>Guarantee</i> .....	50.00
	Average of analyses ..... All samples up to guarantee.	56.54
23	FINLAY, DICK & CO., NEW ORLEANS.	
	Average of analyses ..... All samples up to guarantee.	56.99
1	PARKER, BLAKE & CO., NEW ORLEANS.	
	Analysis .....	56.93

ANNUAL  
FERTILIZER REPORT

FOR THE  
SEASON, 1903-1904.

Comprising a Report of Tonnage, and  
Comparison of Same.

BY

CHAS. H. O'ROURKE,

Chief Inspector.

NEW ORLEANS, January 20, 1905.

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J. K. MILACON.....Breau Bridge, La.



## LETTER OF TRANSMITTAL.

*Commissioner J. G. Lee, of the Louisiana State Board of Agriculture and Immigration, Baton Rouge, La.*

SIR—In the affairs of commerce, as in all things else, the uses and customs prevailing after long years of existence sometimes become inconsistent and antiquated as to the customs and necessities of a people. The need of Legislative ruling existed some years prior to the year 1888 for the enactment of a fertilizer law, but like the evolution of human affairs, it necessitated time to develop a condition propitious to a proper fulfillment of a people's need, and since the passage of the first law (Act 51 of 1888) customs and change of conditions effecting a difference in requirements; has been the cause of re-enacting the original law no less than three different times (Acts 51 of 1888, 72 of 1894 and 126 of 1898), while appended to the scope of the present fertilizer law might be included Act 48 of 1902 that applies to cotton seed meal when sold as fertilizer; Act 153 of 1904 that applies to commercial feed, and Act 174 of 1904 that applies to Paris green. This report in its entirety is a resume of the work performed in the inspection of fertilizers and the analyses of the same. It contains over one hundred pages of typewritten matter, valuable in its import to the record of work and to the Department, but unfortunately too voluminous in its extent to allow of its being printed for public information; therefore the following pages are presented.

Respectfully submitted,

CHAS. H. O'ROURKE,

Chief State Inspector.

Main Office Inspection Department, 714 Union Street, New Orleans, January 18, 1905.

## ANNUAL REPORT.

*Hon. J. G. Lee, Commissioner of Agriculture and Immigration,  
Baton Rouge, La.:*

SIR—In submitting this, my Annual Report for the Season 1903-1904, beg to hand you herewith letters received from Inspectors Calhoun, Murphy and Perkins of Calhoun, Terrebonne and Baton Rouge Districts, respectively. These letters were requested during the latter part of last season—though up to the present time have not received a reply from Inspector Sellers, who represented the Department in Leesville District.

The Fertilizer Season of 1903-1904, terminating August 31, 1904, was the most prosperous in the fertilizer trade Louisiana has ever experienced—according to the available records of this Department and statements made by veteran fertilizer manufacturers; the unequaled record being established not only in the tonnage shipped, but also in the crop yields resulting as a consequence.

During the Season 1903-1904, 5,070 reports were made to you by this Department, covering 81,091.56 tons and 1,435,755 sacks of commercial fertilizer.

This is an increase for the Season 1903-1904 over tonnage for Season 1902-1903 amounting to 1,009 inspections, 13,168.96 tons and 224,590 sacks.

The total business in Louisiana for the entire season, *i. e.*, from September 1, 1903, to August 31, 1904, showing results as stated for this period of time.

This tonnage was handled by the different districts as follows: Total inspections made and non-inspections covered by reports of Inspectors Perkins, Calhoun, Sellers, Murphy and O'Rourke respectively, for districts named below, showing number tons of fertilizers shipped to below mentioned districts irrespective of classification:

District—	Reports.	Tons.	Sacks.
Baton Rouge .....	225	7,617.44	123,551
Calhoun .....	348	7,519.85	151,198
Leesville .....	250	3,356.20	66,244
Terrebonne .....	207	7,548.10	106,972
New Orleans .....	3,306	37,117.72	675,921
Total .....	4,336	63,159.31	1,123,886

Sub-Inspectors:			
Baton Rouge .....	324	6,639.95	132,799
Calhoun .....	295	7,673.20	107,688
Terrebonne .....	115	3,619.10	71,382
<hr/>			
Total .....	734	17,932.25	311,869
Grand Total:			
Reported by Inspectors.....	4,336	63,159.31	1,435,886
Reported by Sub-Inspectors.	734	17,932.25	311,869
<hr/>			
	5,070	81,091.56	1,435,755

### BRAND CLASSIFICATION.

To establish a comprehensive idea as to the classification of this tonnage, and to make plain the extent of the business for the year, the commercial fertilizer shipments have been separated into seven (7) classes and with proper tonnage allotment are as follows:

	Reports.	Tons.	Sacks.
Class One—			
Cotton seed meal fertilizer..	1,109	21,336.50	424,403
Class Two—			
Complete fertilizer .....	2,736	38,847.47	717,444
Class Three—			
Bone Meal .....	274	2,435.25	24,712
Class Four—			
Acid Phosphate .....	399	3,477.55	66,972
Class Five—			
Tankage .....	385	13,611.89	175,807
Class Six—			
Miscellaneous, Kainits, Muri- ate Potash, Etc. ....	99	330.30	6,016
Class Seven—			
Acid Phosphate and Potash.	68	1,052.60	20,401
<hr/>			
Total .....	5,070	81,091.56	1,435,755

This is the first year that the fertilizer tonnage has been divided into seven (7) classes and the means of allotting the different brands to their proper class has been obtained in the following official chemist's report of former years, which for the Season 1904-1905, it will be necessary to classify the different brands, allotting each to its proper class and the different guarantees registered by manufacturers will be the means of designating each brand.

## COMPLETE FERTILIZERS.

The manufacture and sale of complete fertilizers in Louisiana during the past season has been most phenomenal and surpassed in proportions, finally reached the brightest expectations entertained at the commencement of the year. Next year this class of goods will be divided into five (5) different classes, as above explained. But as tonnage up to this year includes in the term "Complete Fertilizers," "Bone Meal," "Acid Phosphate," "Miscellaneous" and "Acid Phosphate and Potash," it will be necessary to make calculations correct, to make tonnage comparisons this season including their different classes under head of "Complete Fertilizer."

The business for the Season 1902-1903 in this class of commerce amounted to: Shipments, 3,576; tons, 46,143.17; sacks, 835,545.

Formerly it has been my custom to only report three (3) classes, *i. e.*, Cotton seed meal, complete, and tankage fertilizers.

This year it has been deemed expedient and necessary to establish this new departure into classes. However, the above mentioned terms will apply in future to Classes One, Two and Five.

## COTTON SEED MEAL FERTILIZER TONNAGE.

The cotton seed meal fertilizer business for the entire State during the past season amounted to: Shipments, 1,109; tons, 21,336.50; sacks, 424,403.

This is a decrease of 876.60 tons compared with last season's business (892 shipments, 22,213.10 tons and 44,844 sacks).

This tonnage has been handled by the different Inspection Districts as shown below and the following Parishes receiving amounts mentioned:

## CLASS ONE—11 PARISHES.

Parish—	Inspections.	Tons.	Sacks.
Assumption .....	58	1,403.55	28,071
Claiborne .....	43	634.25	12,685
Iberville .....	57	1,562.00	31,775
Lafourche .....	92	3,394.65	67,893
Orleans .....	217	1,453.85	27,942



Ouachita .....	30	1,253.85	24,677
St. James .....	64	1,920.95	37,919
St. John the Baptist.....	32	554.95	11,099
St. Mary .....	93	3,039.00	60,180
Terrebonne .....	79	1,835.10	36,752
West Baton Rouge.....	19	526.00	10,520
All other Parishes .....	325	3,778.35	74,890
	<hr/>	<hr/>	<hr/>
	1,109	21,336.50	424,403

Allotted to the different districts, the work done in the direct Inspection and Sub-Inspection Departments, show the following results:

Reported by Sub-Inspection Departments—

	Shipments.	Tons.	Sacks.
Baton Rouge District .....	324	6,639.95	132,799
Calhoun District .....	155	4,768.00	94,364
Terrebonne District .....	115	3,619.10	71,382
	<hr/>	<hr/>	<hr/>
	594	15,027.05	298,545

Inspections by Inspectors—

M. S. Perkins .....	21	635.50	12,710
N. E. Calhoun .....	14	243.80	4,876
E. T. Sellers .....	4	24.00	480
J. C. Murphy .....	34	1,478.00	29,760
Chas. H. O'Rourke .....	152	1,314.70	26,003
	<hr/>	<hr/>	<hr/>
	225	3,696.00	73,829

Non-inspection reports by Inspectors—

M. S. Perkins .....	38	1,125.35	22,507
E. T. Sellers .....	1	4.00	80
J. C. Murphy .....	5	155.00	3,100
Chas. H. O'Rourke .....	246	1,329.10	26,342
	<hr/>	<hr/>	<hr/>
	290	2,613.45	52,029

Total number of shipments,  
tons and sacks, cotton seed  
meal fertilizer shipped to  
Louisiana points ..... 1,109      21,336.50      424,403

To more fully present the extent of the tonnage in complete fertilizers marketed during the past season, the following tabulations that show the number of shipments, tons and sacks, made to each Parish is presented; goods classified in Classes Two, Three, Four, Six and Seven (Class Five being "Tankage," shown



under separate head). Items only show amounts of 500 tons or more:

CLASS TWO—18 PARISHES.

Parish—	Inspections.	Tons.	Sacks.
Bienville .....	152	2,217.95	44,429
Calcasieu .....	125	1,799.60	35,239
Claiborne .....	166	2,537.10	52,155
DeSoto .....	60	833.00	16,640
East Baton Rouge .....	82	1,576.50	30,785
East Feliciana .....	259	4,879.00	94,950
Grant .....	34	511.15	10,169
Jackson .....	39	1,026.55	20,531
Lincoln .....	111	2,539.35	25,560
Ouachita .....	197	2,374.30	47,326
Rapides .....	49	754.65	15,083
St. Mary .....	27	682.40	13,634
St. Tammany .....	242	1,749.15	14,558
Tangipahoa .....	325	4,469.00	93,547
Union .....	81	1,438.00	28,680
Washington .....	245	3,333.75	50,122
Webster .....	64	1,087.05	22,744
Winn .....	44	674.30	12,986
All other Parishes .....	445	4,837.95	93,665
	<hr/>	<hr/>	<hr/>
	2,736	38,847.47	717,444

CLASS THREE—2 PARISHES.

Parish—	Inspections.	Tons.	Sacks.
East Feliciana .....	50	778.60	7,916
St. Tammany .....	82	636.60	5,707
All other Parishes .....	142	1,020.05	11,089
	<hr/>	<hr/>	<hr/>
	274	2,435.25	24,712

CLASS FOUR—1 PARISH.

Parish—	Inspections.	Tons.	Sacks.
East Feliciana .....	62	807.50	14,595
All other Parishes .....	337	2,670.05	52,377
	<hr/>	<hr/>	<hr/>
	399	3,477.55	66,972

There were 99 shipments—330.30 tons, 6,016 sacks—Class Six (Miscellaneous fertilizers, such as muriate of potash, Kainit, etc.) shipped to points in Louisiana.

## CLASS SEVEN—1 PARISH.

Parish—	Inspections.	Tons.	Sacks.
Calcasieu .....	58	1,004.00	19,455
All other Parishes .....	10	48.60	946
	<hr/> 68	<hr/> 1,052.60	<hr/> 20,401

This tonnage has been handled by the different Inspection and Sub-Inspection Districts as follows; and your attention is called to the fact that the Sub-Inspection Department of Calhoun District handled over 3,000 tons of complete fertilizers in the routine of their work:

	Inspections.	Tons.	Sacks.
By Sub-Inspection Departments of Baton Rouge, Calhoun and Terrebonne.	140	3,005.20	13,724

By Inspectors—			
M. S. Perkins .....	65	1,881.80	36,279
N. E. Calhoun .....	305	6,873.05	136,247
E. T. Eellers .....	230	2,978.20	58,884
J. C. Murphy .....	13	286.00	4,820
Chas. H. O'Rourke .....	2,443	26,917.17	504,256
	<hr/> 3,056	<hr/> 38,936.22	<hr/> 740,486

Non-inspections by Inspectors—			
N. E. Calhoun .....	29	403.00	10,075
E. T. Sellers .....	15	350.00	6,800
J. C. Murphy .....	3	50.00	1,000
Chas. H. O'Rourke .....	331	3,498.75	63,840
	<hr/> 378	<hr/> 4,301.75	<hr/> 81,715
	<hr/> 140	<hr/> 3,005.20	<hr/> 13,724
	<hr/> 3,056	<hr/> 38,936.22	<hr/> 740,486
	<hr/> 378	<hr/> 4,301.75	<hr/> 81,715

Grand total, showing number shipments, tons and sacks, complete fertilizers shipped to Louisiana as follows .....	3,574	46,243.17	834,925
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## TANKAGE—CLASS FIVE.

The fertilizer business in Louisiana for the Season 1903-1904 amounted to: Shipments, 385; tons, 13,611.89; sacks,

This record shows a slight decrease of 867.01 tons and 16,985 sacks, but an increase in number of shipments, amounting to 61, as compared with Season 1902-1903. This tonnage has been handled by the different Districts of the Inspection Department as follows:

INSPECTIONS.		Tons.	Sacks.
M. S. Perkins, Baton Rouge			
District .....	85	3,582.00	48,420
J. C. Murphy, Terrebonne			
District .....	150	5,529.10	67,693
Charles H. O'Rourke, New Orleans District .....	100	2,761.00	38,274
	<hr/>	<hr/>	<hr/>
	335	11,872.10	154,387

NON-INSPECTIONS.			
M. S. Perkins, Baton Rouge			
District .....	14	392.79	3,615
J. C. Murphy, Terrebonne			
District .....	2	50.00	599
Charles H. O'Rourke, New Orleans District .....	34	1,297.00	17,306
	<hr/>	<hr/>	<hr/>
	50	1,739.79	21,420
	<hr/>	<hr/>	<hr/>
Grand total .....	385	13,611.89	175,807

As a matter of information and to show the allotment of tonnage where shipments to different Parishes have been made aggregating 500 tons or more, the following tabulations are presented:

CLASS FIVE—9 PARISHES.			
Parish—	Inspections.	Tons.	Sacks.
Ascension .....	35	1,352.00	22,006
Assumption .....	53	2,163.50	28,191
Iberville .....	15	549.75	6,275
Lafourche .....	34	1,068.00	12,915
Plaquemines .....	19	845.00	10,507
St. Charles .....	20	535.00	6,657
St. James .....	44	1,150.29	16,837
St. Mary .....	40	1,209.12	20,201
Terrebonne .....	98	3,634.95	45,063
All other Parishes .....	28	840.12	10,071
	<hr/>	<hr/>	<hr/>
	385	13,611.89	175,807

RECAPITULATION SHOWING AMOUNT OF TONNAGE SHIPPED TO LOUISIANA CLASSIFIED AND  
ALLOTTED TO EACH STATE FROM WHICH SHIPPED.

STATES.	COTTON SEED MEAL.			COMMERCIAL.			TANKAGE.		
	Inspections.	Tons.	Sacks.	Inspections.	Tons.	Sacks.	Inspections.	Tons.	Sacks.
Arkansas.....	18	642.00	12,840						
Mississippi.....	165	887.85	17,760						
Tennessee.....									
Georgia.....									
Illinois.....									
Texas.....	3	65.00	1,300						
Louisiana.....	885	18,616.30	369,990						
Missouri.....									
Nebraska.....									
Minnesota.....									
Kansas.....									
Totals .....	1071	30,211.15	403,890	3613	68,378.52	857,378	386	13,501.89	174,487

## REGISTRATIONS OF COMMERCIAL FERTILIZER BRANDS BY MANUFACTURERS

Brand.	Name of Dealer or Manufacturer.	Domicile of Dealer or Manufacturer.
Bone Meal .....	The Armour Fert. Works .....	Chicago and Omaha.
Armour's Cane Grower .....	The Armour Fert. Works .....	Chicago, Ill. .... Omaha, Neb. .... Kansas City, Mo. .... Fort Worth, Tex. .... Nashville, Tenn. .... Atlanta, Ga. .... East St. Louis, Ill. ....
Plantation Special .....		
Planters' Best .....	The Armour Fert. Works .....	East St. Louis, Ill. ....
Louisiana Special .....	The Armour Fert. Works .....	East St. Louis, Ill. ....
Corn and Cotton .....	The Armour Fert. Works .....	East St. Louis, Ill. ....
King Cotton .....	The Armour Fert. Works .....	East St. Louis, Ill. ....
All Soluble .....	The Armour Fert. Works .....	East St. Louis, Ill. ....
A. C. O. Co.'s Acid Phosphate .....	Arcadia Cotton Oil Mill and Mfg. Co. ....	Arcadia, La. ....
A. C. O. Co.'s Cotton Fertilizer .....	Arcadia Cotton Oil Mill and Mfg. Co. ....	Arcadia, La. ....
A. C. O. Co.'s Corn Fertilizer .....	Arcadia Cotton Oil Mill and Mfg. Co. ....	Arcadia, La. ....
A. C. O. Co.'s Poor Land Fertilizer .....	Arcadia Cotton Oil Mill and Mfg. Co. ....	Arcadia, La. ....
Barataria Shrimp Scrap .....	Barataria Canning Co. ....	Biloxi, Miss. ....
Birmingham H. G. A. Phosphate and Ammonia .....	Birmingham Fertilizer Co. ....	Birmingham, Ala. ....
Birmingham Std. G. Fertilizer .....	Birmingham Fertilizer Co. ....	Birmingham, Ala. ....
Nonpareil .....	Capital Fertilizer Mfg. Co. ....	Jackson, Miss. ....
Red Star Brand .....	Capital Fertilizer Mfg. Co. ....	Jackson, Miss. ....
Cotton Elevator .....	Capital Fertilizer Mfg. Co. ....	Jackson, Miss. ....
H. G. Acid Phosphate .....	Capital Fertilizer Mfg. Co. ....	Jackson, Miss. ....
German Kainit .....	Capital Fertilizer Mfg. Co. ....	Jackson, Miss. ....
Crescent Finished Fertilizer .....	The Crescent City Stock Yard and Slaughter House Co., Ltd. ....	New Orleans, La. ....
Crescent Ground Bone .....	The Crescent City Stock Yard and Slaughter House Co., Ltd. ....	New Orleans, La. ....
Blood and Bone Fertilizer .....	The Cudahy Packing Co. ....	South Omaha, Neb. .... Kansas City, Kan. .... Sioux City, Ia. .... Clinton, La. ....
C. O. M. C. O. Fertilizer .....	Clinton Oil and Mfg. Co., Ltd. ....	Clinton, La. ....
Imperial .....	Hazlehurst O. M. & Fert. Co. ....	Hazlehurst, Miss. ....
Superior .....	Hazlehurst O. M. & Fert. Co. ....	Hazlehurst, Miss. ....
Diamond A. ....	Hazlehurst O. M. & Fert. Co. ....	Hazlehurst, Miss. ....
High Grade .....	Hazlehurst O. M. & Fert. Co. ....	Hazlehurst, Miss. ....
Acid Phosphate .....	Hazlehurst O. M. & Fert. Co. ....	Hazlehurst, Miss. ....
German Kainit .....	Hazlehurst O. M. & Fert. Co. ....	Hazlehurst, Miss. ....
High Grade Ac. Phosphate .....	Jackson Fertilizer Co. ....	Jackson, La. ....



AND DEALERS, FOR THE SEASON 1903-04 IN COMPLIANCE WITH ACT 126 OF 1898.

Weight of Package.	Nitrogen.	PHOSPHORIC ACID.			Potash.	Ammonia.
		Soluble	Reverted	Insoluble		
100-167						
200	2.47		10.00-14.00	14.00-16.00		
100						
150						
167	3.29	6.00	2.00 to 3.00	2.00 to 3.00		
200						
100						
150						
167	7.00		4.00	2.50		
200						
	9.87					
	6.58					
100	.82	6.00	2.00	2.00	1.00	
167	1.65	6.00	2.00	2.00	2.00	
200	2.88	6.00	2.00	2.00	4.00	
100		14.00				
100	1.75 to 2.00	10.50			.50 to 1.00	
100	3.50 to 4.00	7.00			1.00	
100	5.50 to 6.00	4.00			1.50	
100	6.80			4.00		
200	1.65	11.00	3.00	2.00		
200	1.65	6.00	2.00	2.00	2.00	
100	1.65	7.50	2.00	1.00	2.25	
100	1.65	7.50	2.00	1.00	2.25	
100	1.65	7.50	2.00	1.00	2.25	
100		10.00	2.00	1.00		
100					12.00	
150	5.88					7.14
200	3.92	Total 24.31				
100	5.50	5.40		8.00		
200						
100	1.75	6.00	4.36	.84	2.00	
100	1.65	7.00	2.00	1.00	1.50	
100	1.65	7.00	2.00	1.00	1.50	
100	2.00	5.00	1.50	1.00	3.00	
		12.00	2.00	1.00		
					12.00	
100						8.00
100	6.00	2.00				
100		10.00	2.00	1.00		

Brand.	Name of Dealer or Manufacturer.	Domicile of Dealer or Manufacturer.
Chicago R. B. Superphos.	Jackson Fertilizer Co.	Jackson, Miss.
Lampton's R. B. Superphosphate	Jackson Fertilizer Co.	Jackson, Miss.
Gulf States' Guano	Jackson Fertilizer Co.	Jackson, Miss.
Royal C. Brand	Jackson Fertilizer Co.	Jackson, Miss.
Fruit and Vegetable	Jackson Fertilizer Co.	Jackson, Miss.
Black Hawk Acid Phosphate	Jackson Fertilizer Co.	Jackson, Miss.
German Kainit.	Jackson Fertilizer Co.	Jackson, Miss.
High Grade Ac. Phosphate	Jackson Fertilizer Co.	Jackson, Miss.
Black Hawk Acid Phosphate	Jackson Fertilizer Co.	Jackson, Miss.
Bone Meal	Jackson Fertilizer Co.	Jackson, Miss.
Pure Steamed Bone.	B. M. Morrison.	Hammond, La.
	Swift & Co., Ltd	Chicago, Ill.
Pure Raw Bone Meal.	B. M. Morrison.	Hammond, La.
	Swift & Co., Ltd	Chicago, Ill.
Meridian Home Mixture	Meridian Fert. Factory	Meridian, Miss.
Meridian Soluble Guano	Meridian Fert. Factory	Meridian, Miss.
Meridian Blood and Bone	Meridian Fert. Factory	Meridian, Miss.
Meridian Veget'ble Grow'r	Meridian Fert. Factory	Meridian, Miss.
Meridian Southern Acid Phosphate.	Meridian Fert. Factory	Meridian, Miss.
Planters' Cotton and Corn 1	Planters' Fert. Mfg. Co.	New Orleans.
Planters' Cotton and Corn 2	Planters' Fert. Mfg. Co.	New Orleans.
Stubbs' Formula Cotton and Corn	Planters' Fert. Mfg. Co.	New Orleans.
Planters' Cotton and Corn Maker	Planters' Fert. Mfg. Co.	New Orleans.
Planters' High Grade Superphosphate.	Planters' Fert. Mfg. Co.	New Orleans.
Stubbs' Formula for Vegetables	Planters' Fert. Mfg. Co.	New Orleans.
Planters' Acid Phosphate.	Planters' Fert. Mfg. Co.	New Orleans.
Planters' Rice and Oat Fertilizer	Planters' Fert. Mfg. Co.	New Orleans.
Kainit (German)	Planters' Fert. Mfg. Co.	New Orleans.
Muriate of Potash	Planters' Fert. Mfg. Co.	New Orleans.
Henry McCall's Formula Sugar Cane	Planters' Fert. Mfg. Co.	New Orleans.
Stubbs' Formula for Sugar Cane	Planters' Fert. Mfg. Co.	New Orleans.
Maginnis' Formula Sugar Cane	Planters' Fert. Mfg. Co.	New Orleans.
Planters' Special Strawberry Fert.	Planters' Fert. Mfg. Co.	New Orleans.
Planters' Special Ammoniated Rice Fert.	Planters' Fert. Mfg. Co.	New Orleans.

Weight of Package.	Nitrogen.	PHOSPHORIC ACID.			Potash.	Ammonia.
		Soluble	Reverted	Insoluble		
100	1.65	7.50	2.00	1.00	1.50	.....
200	1.65	7.50	2.00	1.00	1.50	.....
100	1.65	7.50	2.00	1.00	1.80	.....
100	1.65	7.50	2.00	1.00	1.80	.....
100	3.00	3.00	3.00	1.00	4.00	.....
100	.....	10.00	2.00	1.00	.....	.....
200	.....	.....	.....	.....	12.00	.....
100	.....	12.00	2.00	1.00	.....	.....
100	.....	12.00	2.00	1.00	.....	.....
.....	2.50	.....	.....	.....	B. P. Lime 50 p. c.	
200	.....	Total Phosphoric Acid 25 per ct.			.....	3.00
200	3.00	Total Phosphoric Acid 23 per ct.			.....	.....
100	1.65	8.00	1.00	1.00	1.50	.....
100	1.65	8.00	1.00	1.00	1.50	.....
100	1.65	8.00	1.00	1.00	1.50	.....
100	2.50	5.00	1.00	6.00	6.00	.....
100	.....	12.00	2.00	14.00	.....	.....
100	1.65	6.50	2.50	2.00	1.00	.....
100	1.65	6.50	2.50	2.00	1.00	.....
100	1.65	5.00	2.00	1.50	2.00	.....
100	1.65	7.15	2.85	2.00	2.00	.....
100	1.65	7.15	2.85	2.00	2.00	.....
100	2.47	5.00	2.00	1.50	3.50	.....
100	.....	13.00	2.00	1.00	.....	.....
100	.....	7.15	2.85	1.50	2.00	.....
100	.....	.....	.....	.....	12.00	.....
100	.....	.....	.....	.....	48.00	.....
100	3.71	3.60	1.40	1.50	.50 or trace	
100	2.27	5.40	2.10	1.50	2.00	.....
100	3.30	7.15	2.85	1.50	Trace	.....
100	1.65	3.60	1.40	1.00	5.00	.....
100	.82	5.00	2.00	1.00	2.00	.....

Brand.	Name of Dealer or Manufacturer.	Domicile of Dealer or Manufacturer.
Planters' Young Fruit Tree Fert.	Planters' Fert. Mfg. Co.	New Orleans
Planters' Fruit Tree Fert.	Planters' Fert. Mfg. Co.	New Orleans
Planters' Special Cabbage Fertilizer	Planters' Fert. Mfg. Co.	New Orleans
Planters' Special Tomato Fertilizer	Planters' Fert. Mfg. Co.	New Orleans
Planters' English Acid Phosphate.	Planters' Fert. Mfg. Co.	New Orleans
Stanley & Gore's Raw Bone Superphosphate.	Planters' Fert. Mfg. Co.	New Orleans
Gilead Phosphate	E. D. Reichert & Co.	Roseland, La.
Cotton King.	Jones Bros. Chemical Co.	Cincinnati, O.
	Ruston Oil Mills & Fert. Co., Ltd.	Ruston, Ia.
Daybreak Fertilizer	Rumble & Wensel Co.	Natchez, Miss.
Daybreak P. H. S. Acid Phosphate	Federal Chemical Co.	Nashville, Tenn.
	Rumble & Wensel Co.	Natchez, Miss.
	Federal Chemical Co.	Nashville, Tenn.
Raw Bone Superphosphate Champion	St'drd G. & Chem. Mfg. Co.	New Orleans
Ground Bone	St'drd G. & Chem. Mfg. Co.	New Orleans
Acid Phosphate	St'drd G. & Chem. Mfg. Co.	New Orleans
Standard Sugar Cane	St'drd G. & Chem. Mfg. Co.	New Orleans
Kainit (imported).	St'drd G. & Chem. Mfg. Co.	New Orleans
Ster.'s Diss. Bone	St'drd G. & Chem. Mfg. Co.	New Orleans
Miss. Home Guano	St'drd G. & Chem. Mfg. Co.	New Orleans
Blood, Bone & Meat	St'drd G. & Chem. Mfg. Co.	New Orleans
McCall's Formula	St'drd G. & Chem. Mfg. Co.	New Orleans
Pelican Raw Bone Guano.	St'drd G. & Chem. Mfg. Co.	New Orleans
Vegetable.	St'drd G. & Chem. Mfg. Co.	New Orleans
Peguin.	St'drd G. & Chem. Mfg. Co.	New Orleans
Standard Am. Sol. Guano.	St'drd G. & Chem. Mfg. Co.	New Orleans
Fruit Tree Fert	St'drd G. & Chem. Mfg. Co.	New Orleans
Sulphate of Potash (imp'd)	St'drd G. & Chem. Mfg. Co.	New Orleans
Muriate of Potash	St'drd G. & Chem. Mfg. Co.	New Orleans
Standard R. B. Rice Fert.	St'drd G. & Chem. Mfg. Co.	New Orleans
Diss. Bone & Potash	St'drd G. & Chem. Mfg. Co.	New Orleans
Acid Phos. & Potash	St'drd G. & Chem. Mfg. Co.	New Orleans
Nitrate of Soda (imported)	St'drd G. & Chem. Mfg. Co.	New Orleans
Special formulas as ordered—		
Champion	St'drd G. & Chem. Mfg. Co.	New Orleans
Miss. Home Guano	St'drd G. & Chem. Mfg. Co.	New Orleans
Star.	Shreveport Fert. Co.	Shreveport, La.
Crown	Shreveport Fert. Co.	Shreveport, La.
Caddo Cotton.	Shreveport Fert. Co.	Shreveport, La.
Corn & Vegetable	Shreveport Fert. Co.	Shreveport, La.
Caddo Vegetable	Shreveport Fert. Co.	Shreveport, La.
Caddo Special	Shreveport Fert. Co.	Shreveport, La.
Acid Phosphate	Shreveport Fert. Co.	Shreveport, La.



Weight of Package.	Nitrogen.	PHOSPHORIC ACID.			Potash.	Ammonia.
		Soluble	Reverted	Insoluble		
100	3.30	2.80	1.20	1.50	1.00	
100	1.65	4.00	2.00	1.00	5.00	
100	2.48	4.00	2.00	1.00	4.00	
100	1.65	3.60	1.40	1.00	3.00	
100		10.76	2.15	2.85		
100	1.65	9.00	2.00		6.00	
100	2.47	9.00	10.00		2.00	
100	1.75	6.00 to 8.00	2.00 to 3.00	1.00 to 2.00	2.00	
100	1.65	8.00		1.00	2.00	
100		10.00	4.00	1.00		
100-200	1.65 to 2.50	4.00 to 5.00	5.00 to 5.50	1.00 to 3.00	1.00 to 3.00	
100-200	1.65 to 2.50	4.00 to 5.00	4.00 to 5.00	1.00 to 3.00	1.50 to 3.00	
100-200	2.50 to 3.25			18.50-21.00		
100-200		10.00-12.00	2.00 to 4.00	1.00 to 3.00		
100-200	2.50 to 3.50	7.00 to 9.00	3.00 to 4.00	1.00 to 3.00	2.00 to 3.00	
100-200					12.00 14.00	
100-200		13.00-14.00	2.00 to 5.00	1.00 to 3.00		
100-200	1.65 to 3.29	5.00 to 6.50	5.00 to 6.50	1.00 to 3.00	2.00 to 4.25	
100-200	1.70 to 2.67	4.00 to 8.00	4.74 to 6.74	1.00 to 3.00	2.00 to 4.25	
100-200	3.85	3.75	1.25	1.00	1.00	
100-200	1.65 to 2.50	4.00 to 5.00	4.00 to 5.00	1.00 to 3.00	1.50 to 3.00	
100-200	3.00 to 5.00	4.00 to 6.00	2.00 to 4.00	1.00 to 3.00	5.00 to 7.00	
100-200	2.00 to 2.88	4.00 to 5.00	3.00 to 4.00	1.00 to 3.00	1.50 to 3.00	
100-200	1.65 to 2.50	4.00 to 5.00	4.00 to 5.00	1.00 to 3.00	1.50 to 3.00	
100-200	2.75 to 4.00			15.00-20.00	3.00 to 4.00	
100-200					48.00-50.00	
100-200					49.00-51.00	
100-200	1.65 to 2.50	4.00 to 5.00	5.00 to 5.50	1.00 to 3.00	1.50 to 3.00	
100-200		8.00 to 9.00	2.00 to 3.00	1.00 to 3.00	4.00 to 4.50	
100-200		8.00 to 9.00	2.00 to 3.00	1.00 to 3.00	2.00 to 2.50	
100-200	15.00-16.00					
100-200	1.65 to 2.50	7.00 to 7.50	2.00 to 2.50	1.00 to 3.00	1.00 to 1.50	
100-200	1.65 to 2.50	7.00 to 7.50	2.00 to 2.50	1.00 to 3.00	1.00 to 1.50	
100	1.65	8.00	2.00	1.00	1.50	
100	1.65	8.00	1.00	1.00	1.00	
100	2.05	6.00	2.00	1.00	1.00	
100	2.90	5.00	1.00	1.00	1.00	
100	3.30	6.00	2.00	2.00	4.00	
100	2.50	4.00	2.00	1.00	7.00	
100		14.00	2.00	1.00		



Brand.	Name of Dealer or Manufacturer.	Domicile of Dealer or Manufacturer.
Tankage .....	Swift & Co. ....	Chicago, Ill. ....
Tankage .....	Swift & Co. ....	Kansas City, Kan. ....
Tankage .....	Swift & Co. ....	St. Joseph, Mo. ....
Tankage .....	Swift & Co. ....	St. Paul, Minn. ....
Tankage .....	Swift & Co. ....	Omaha, Neb. ....
Tankage .....	Swift & Co. ....	East St. Louis, Ill. ....
Tankage .....	Swift & Co. ....	Fort Worth, Tex. ....
Tankage .....	Swift & Co. ....	.....
Tankage .....	Swift & Co. ....	.....
Tankage .....	Swift & Co. ....	.....
Tankage .....	Swift & Co. ....	.....
H. G. Ground Tankage. ....	Swift & Co. ....	.....
Swift's Special High Grade Guano .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Monarch H. G. Guano .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Cotton King H. G. Guano .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Eagle H. G. Guano .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Golden Harvest H. G. Guano .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Red Steer H. G. Guano .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Cotton Plant H. G. Guano .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Plow Boy H. G. Guano .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Yazoo Standard Grade Guano. ....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Atlanta H. G. Phosphate and Potash. ....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Farmers Home H. G. Phosphate and Potash. ....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Plantation St. G. Phosphate and Potash. ....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's German Kainit .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Wheat Grower St. G. Phosphate & Potash. ....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Field & Farm St. G. Phosphate & Potash. ....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Cultivator H. G. Acid Phosphate .....	Swift Fertilizer Work5 .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Chattahoochee St. G. Acid Phosphate .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Bone Meal and High Grade .....	Swift Fertilizer Works .....	Atlanta, Ga. and E. St. Louis, Ill. ....
Swift's Raw Bone Meal and High Grade. ....	Swift Fertilizer Works. ....	Atlanta, Ga. and E. St. Louis, Ill. ....

Weight of Package.	Nitrogen.	PHOSPHORIC ACID.			Potash.	Ammonia.
		Soluble	Reverted	Insoluble		
100-167				4.58		11.00
100-167				6.87		10.00
100-167				6.87		9.00
100-167				9.16		8.00
100-167				11.45		7.00
100-167				13.74		6.00
100-167	8.25	Total Phosphoric Acid, 4.58				
100-167	7.41	Total Phosphoric Acid, 4.58				
100-167	6.58	Total Phosphoric Acid, 4.58				
100-167	5.76	Total Phosphoric Acid, 4.58				
100-167	4.94	Total Phosphoric Acid, 4.58				
100-167						
100-200	4.12	6.00	2.00	1.00	3.00	
100-200	3.29	5.00	2.00	1.00	4.00	
100-200	2.47	5.00	2.00	1.00	2.00	
100-200	1.65	7.00	2.00	1.00	2.00	
100-200	1.65	5.00	2.00	1.00	2.00	
100-200	1.65	5.00	2.00	1.00	2.00	
100-200	1.65	6.00	2.00	1.00	1.00	
100-200	.82	7.00	2.00	1.00	1.00	
100-200	1.65	4.00	2.00	1.00	1.00	
100-200		9.00	2.00	1.00	4.00	
100-200		7.00	2.00	1.00	4.00	
100-200		5.00	2.00	1.00	4.00	
100-200					12.00	
100-200		7.00	2.00	1.00	2.00	
100-200		7.00	2.00	1.00	2.00	
100-200		11.00	2.00	1.00		
100-200		9.00	2.00	1.00		
100-200	2.47	25.00 Total Phosphoric Acid				
100-200	3.29	23.00 Total Phosphoric Acid			50.00	

Brand.	Name of Dealer or Manufacturer.	Domicile of Dealer or Manufacturer.
Swift's Muriate Potash .....	Swift Fertilizer Works .....	Atlanta, Ga. and E.
Swift's Muriate Soda .....	Swift Fertilizer Works .....	St, Louis, Ill. ....
		Atlanta, Ga. aud E.
		St. Louis, Ill. ....
Ox Slaughter House Bone.	Tennessee Chemical Co.....	Nashville, Tenn.....
Royal H. G. Guano.....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
Royal Cotton Boll Guano..	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
Royal Animal Bone Guano	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
Royal Blood, Bone and	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
Potash .....		bile and Mont-
		gomery, Ala.....
Scott's Gossypium Phospho	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
Scott's Std. State Guano....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
Scott's Ammoniated Bone.	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
Scott's Meal Formula.....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
Royal Vegetable Fertilizer	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
Royal Fruit Grower.....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
V. C. Garden Truck Spe-	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
cial .....		bile and Mont-
		gomery, Ala.....
V. C. C. Fruit and Truck	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
Special.....		bile and Mont-
		gomery, Ala.....
Fruit Tree Special.....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
Royal Potash Compound....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....
Royal Grain Grower .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo-
		bile and Mont-
		gomery, Ala.....

Weight of Package.	Nitrogen.	PHOSPHORIC ACID.			Potash.	Ammonia.
		Soluble	Reverted	Insoluble		
100-200					50.00	
100-200	13.17					
200	1.65	6.00	2.00	1.00	2.00	
100-200	1.65 to 2.50	8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	2.00 to 3.00	
100-200	1.65 to 2.50	6.00 to 7.00	2.00 to 3.00	2.00 to 3.00	2.00 to 3.00	
100-200	1.65 to 2.50	7.00 to 8.00	2.00 to 3.00	2.00 to 3.00	1.00 to 2.00	
100-200	.82 to 1.65	8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	1.00 to 2.00	
100-200	1.65 to 2.50	8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	2.00 to 3.00	
100-200	1.65 to 2.50	6.00 to 7.00	2.00 to 3.00	2.00 to 3.00	2.00 to 3.00	
100-200	1.65 to 2.50	7.00 to 8.00	2.00 to 3.00	2.00 to 3.00	1.00 to 2.00	
100-200	.82 to 1.65	8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	1.00 to 2.00	
100-200	2.47 to 3.30	6.00 to 7.00	2.00 to 3.00	2.00 to 4.00	4.00 to 5.00	
100-200	2.47 to 3.30	6.00 to 7.00	2.00 to 3.00	2.00 to 4.00	5.00 to 6.00	
100-200	4.94 to 5.76	4.00 to 5.00	2.00 to 3.00	2.00 to 3.00	4.00 to 5.00	
100-200	3.30 to 4.13	4.00 to 5.00	2.00 to 3.00	2.00 to 3.00	8.00 to 9.00	
100-200	1.23 to 2.00	7.00 to 8.00	3.00 to 4.00	2.00 to 3.00	8.00 to 10.00	
100-200		8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	4.00 to 5.00	
100-200		8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	4.00 to 5.00	

Brand.	Name of Dealer or Manufacturer.	Domicile of Dealer or Manufacturer.
Royal Compound.....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Royal Acid Phosphate.....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Royal Dissolved Bone .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Scott's H. G. Acid Phos. ....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Scott's Potasso Phospho. ....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
German Kainit, Imported. ....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
I. X. L. Acid Phosphate.....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Mobile Dble. Eagle Guano .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Mobile Standard Guano .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Eclipse Soluble Guano.....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
V. C. C. Co.'s Truck Grower .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
V. C. C. Co.'s Ammoniated Fertilizer .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Pure Raw Animal Bone .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Royal H. G. Guano. ....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Scott's Gossypium Phospho .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Mobile Dble. Eagle Guano .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Scott's Meal Formula .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....



Weight of Package.	Nitrogen.	PHOSPHORIC ACID.			Potash.	Ammonia.
		Soluble	Reverted	Insoluble		
100-200	.....	8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	2.00 to 3.00	.....
100-200	.....	10.00-11.00	2.00 to 3.00	2.00 to 3.00	.....	.....
100-200	.....	12.00-13.00	2.00 to 3.00	2.00 to 3.00	.....	.....
100-200	.....	12.00-13.00	2.00 to 3.00	2.00 to 3.00	.....	.....
100-200	.....	9.00 to 10.00	3.00 to 4.00	2.00 to 3.00	2.00 to 3.00	.....
100-200	.....	.....	.....	.....	12.00-14.00	.....
100-200	.....	9.00 to 10.00	3.00 to 4.00	2.00 to 3.00	.....	.....
100-200	1.65 to 2.50	8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	2.00 to 3.00	.....
100-200	.....	.....	.....	.....	.....	.....
100-200	1.65 to 2.50	6.00 to 7.00	2.00 to 3.00	2.00 to 3.00	2.00 to 3.00	.....
100-200	1.65 to 2.50	7.00 to 8.00	2.00 to 3.00	2.00 to 3.00	1.00 to 2.00	.....
100-200	2.06 to 3.00	6.00 to 7.00	2.00 to 3.00	2.00 to 4.00	6.00 to 8.00	.....
100-200	.82 to 1.65	7.00 to 8.00	3.00 to 4.00	2.00 to 3.00	3.00 to 4.00	.....
100-200	3.30 to 4.12	Total Phosphoric Acid, 20.00-25.00			.....	.....
100-200	1.65 to 2.50	8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	1.50 to 2.50	.....
100-200	1.65 to 2.50	8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	1.50 to 2.50	.....
100-200	1.65 to 2.50	8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	1.50 to 2.50	.....

Brand.	Name of Dealer or Manufacturer.	Domicile of Dealer or Manufacturer.
Royal Blood, Bone and Potash.....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Royal Acid Phosphate.....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
I. X. L. Acid Phosphate ..	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Royal Bone Superphos- phate .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Capital Bone and Potash Compound .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
V. C. Superphosphate .....	Virginia-Carolina Chem. Co.	Memphis, Tenn., Mo- bile and Mont- gomery, Ala.....
Claiborne Mixture No. 1.....	Homer C. O. Co., Ltd.....	Homer, La.....
Claiborne Mixture No. 2.....	Homer C. O. Co., Ltd.....	Homer, La.....
Fortune Brand .....	Jefferson Gin and Oil Mill.....	Harriston, Miss.....
Jefferson H. G. Acid Phos.	Jefferson Gin and Oil Mill.....	Harriston, Miss.....
Acid Phosphate .....	Lagarde Bros.....	New Orleans.....
Acid Phosphate .....	Grasselli Chemical Co.....	Birmingham, Ala.....
High Gr. Acid Phosphate.....	Minden C. O. & Ice Co., Ltd.....	Minden, La.....
North La. Std. Fertilizer.....	Minden C. O. & Ice Co., Ltd.....	Minden, La.....
Black Diamond Acid Phos.	New Orleans Acid and Fert. Co.....	Gretna, La.....
Crescent City Acid Phos.	New Orleans Acid and Fert. Co.....	Gretna, La.....
High Grade Acid Phos.	New Orleans Acid and Fert. Co.....	Gretna, La.....
Dissolved Bone and Potash.....	New Orleans Acid and Fert. Co.....	Gretna, La.....
Goldsmith's Improved Mix.	New Orleans Acid and Fert. Co.....	Gretna, La.....
Gold Dust .....	New Orleans Acid and Fert. Co.....	Gretna, La.....
Blood, Bone and Potash.....	New Orleans Acid and Fert. Co.....	Gretna, La.....
Blood, Bone and Beef.....	New Orleans Acid and Fert. Co.....	Gretna, La.....
Vegetable Grower.....	New Orleans Acid and Fert. Co.....	Gretna, La.....
Creole S. C. Grower.....	New Orleans Acid and Fert. Co.....	Gretna, La.....
Special S. C. Grower, 67.....	New Orleans Acid and Fert. Co.....	Gretna, La.....
Special S. C. Grower, 106.....	New Orleans Acid and Fert. Co.....	Gretna, La.....

Weight of Package.	Nitrogen.	PHOSPHORIC ACID.			Potash.	Ammonia.
		Soluble	Reverted	Insoluble		
100-200	1.65 to 2.50	7.00 to 8.00	2.00 to 3.00	2.00 to 3.00	1.00 to 2.00	.....
100-200	.....	12.00-13.00	2.00 to 3.00	2.00 to 3.00	.....	.....
100-200	.....	12.00-13.00	2.00 to 3.00	2.00 to 3.00	.....	.....
100-200	.....	12.00-13.00	3.00 to 4.00	2.00 to 3.00	.....	.....
100-200	.....	8.00 to 9.00	2.00 to 3.00	2.00 to 3.00	2.00 to 3.00	.....
100-200	.....	12.00-13.00	4.00 to 5.00	2.00 to 3.00	.....	.....
100	1.75	8.00	2.00	1.00	.50	.....
100	3.00	4.00	2.00	1.00	1.00	.....
100-200	1.98	.....	9.25	.....	1.25	.....
100-200	.....	.....	14.00	.....	.....	.....
100	.....	16.00 Available Phosphoric Acid			.....	.....
100	.....	12.00	2.00	2.00	.....	.....
100	1.75	8.00	2.00	1.00	.....	.....
100-200	.....	10.00	2.00	2.00	.....	.....
100-200	.....	10.00	2.00	2.00	.....	.....
100 200	.....	13.00	2.00	2.00	.....	.....
100-200	.....	8.00	2.00	2.00	2.00	.....
100-200	1.65	7.00	2.00	2.00	1.00	.....
100-200	1.65	7.00	2.00	2.00	1.00	.....
100-200	1.65	7.00	2.00	2.00	1.00	.....
100-200	1.65	7.00	2.00	2.00	1.00	.....
100-200	2.80	6.00	1.25	2.00	2.60	.....
100-200	2.50	6.00	2.00	2.00	.....	.....
100-200	5.00	5.00	2.00	2.00	.....	.....
100-200	8.00	4.00	2.00	2.00	.....	.....

REGISTRATION OF COTTON SEED MEAL AND MEAL FERTILIZER BRANDS BY MANUFACTURERS AND  
DEALERS, FOR THE SEASON 1903-1904, IN COMPLIANCE WITH ACT 48 OF 1902.

BRAND.	Name of Dealer or Manufacturer.	Domicile of Dealer or Manufacturer.	Weight of Package.	Nitrogen.	Ammonia.
Purina Cotton Seed Meal.	Arcadia C. O. Mill & Mfg. Co. ....	Arcadia, La. ....	100	7.00	.....
Cotton Seed Meal.	F. W. Brode & Co. ....	Memphis, Tenn. ....	100	6.00-7.00	.....
Cotton Seed Meal.	Memphis C. O. Co. ....	Bastrop, La. ....	100	8.50	.....
Cotton Seed Meal.	Bastrop Oil & Fertz. Works, Ltd. ....	Breaux Bridge, La. ....	100	6.55-7.00	7.95
Cotton Seed Meal.	Breaux Bridge Oil Works, Ltd. ....	Boyce, La. ....	100	.....	.....
Cotton Seed Meal.	Boyce C. O. & Mfg. Co. ....	Boyce, La. ....	100	6.55	8.00
Prime Meal	Boyce C. O. & Mfg. Co. ....	Boyce, La. ....	100	6.79	8.00
Prime Meal	Boyce C. O. & Mfg. Co. ....	Boyce, La. ....	100	6.17	7.50
Off Meal	Boyce C. O. & Mfg. Co. ....	Boyce, La. ....	100	.....	.....
Cotton Seed Meal Fertilizer	H. S. Crozier ....	New Orleans, La. ....	100	8.00	.....
Cotton Seed Meal	The National C. S. Products Co. ....	Memphis, Tenn. ....	100	6.00	.....
Cotton Seed Meal	Clinton O. & Mfg. Co. ....	Clinton, La. ....	100	6.00-7.00	.....
Cotton Seed Meal	Capital City Oil Mill Co. ....	Baton Rouge, La. ....	100	7.00	.....
Cotton Seed Meal	Concordia O. M. Co., Ltd. ....	Vidalia, La. ....	100	6.00-7.00	.....
Cotton Seed Meal	Fayette Oil Works ....	Fayette, Miss. ....	100	6.00-7.00	.....
Cotton Seed Meal	Feliciana Oil Mill ....	St. Francisville, La. ....	100	6.00-7.00	.....
Cotton Seed Meal	Grand Ecore C. O. Co. ....	Natchitoches, La. ....	100	6.00-7.00	.....
Cotton Seed Meal	B. F. Glover ....	New Orleans, La. ....	100	5.00	.....
Cotton Seed Meal	Gloster Oil Works ....	Gloster, Miss. ....	100	6.00-7.00	.....
Cotton Seed Meal	J. T. Gibbons ....	New Orleans, La. ....	100	.....	6.00-7.00
Cotton Seed Meal	Planters' Oil Mill ....	Monroe, La. ....	100	.....	6.00-7.00
Cotton Seed Meal	J. T. Gibbons ....	New Orleans, La. ....	100	.....	6.00-7.00
Cotton Seed Meal	Southern Oil & Fertz. Co. ....	Meridian, Miss. ....	100	.....	6.00-7.00
Cotton Seed Meal	E. F. George ....	New Orleans, La. ....	100	8.00	.....
Cotton Seed Meal	Drew Oil Mill ....	Monticello, Ark. ....	100	6.00	8.00
Cotton Seed Meal	Hazlehurst O. M. & Fertz. Co. ....	Hazlehurst, Miss. ....	100	6.00-7.00	.....
Cotton Seed Meal	Homer C. O. Co. ....	Homer, La. ....	100	6.25	.....
Cotton Seed Meal	Jackson Fertz. Co. ....	Jackson, Miss. ....	100	6.70	.....
Cotton Seed Meal	Jefferson Gin & Oil Mill Co. ....	Harriston, Miss. ....	100	.....	8.00
Cotton Seed Meal	Lagrade Bros. ....	New Orleans, La. ....	100	6.00-7.00	.....
Cotton Seed Meal	Rodney Gin & Oil Co. ....	Rodney, Miss. ....	100	.....	8.00
Cotton Seed Meal	Lecompte C. O. Co., Ltd. ....	Lecompte, La. ....	100	6.00	.....
Cotton Seed Meal	A. F. Leonhardt & Co. ....	New Orleans, La. ....	100	.....	8.00
Cotton Seed Meal	Summit Gin & Improvement Co. ....	Summit, Miss. ....	100	.....	8.00
Cotton Seed Meal	Lagrade Bros. ....	New Orleans, La. ....	100	.....	8.00
Cotton Seed Meal	Hill City Oil Works ....	Vicksburg, Miss. ....	100	.....	8.00

Cotton Seed Meal.....	Minden C. O. & Ice Co., Ltd. ....	Minden, La. ....	100	7.00	8.00
Standard .....					
Cotton Seed Meal .....	National Cotton Seed Products Co. ....	Little Rock, Ark. ....	100	6.50-7.00	.....
Cotton Seed Meal .....	New Roads O.M. & Mfg. Co., Ltd. ....	New Roads, La. ....	100	6.00	.....
Cotton Seed Meal .....	New Iberia Milling & Development Co. Ltd.	New Iberia, La. ....	100	6.00-7.00	.....
Cotton Seed Meal .....	New Orleans Acid & Fertz. Co. ....	Gretna, La. ....	100	6.00	.....
Cotton Seed Meal .....	New Orleans C. S. Oil & Mfg. Co., Ltd.	New Orleans, La. ....	100	6.00	.....
Cotton Seed Meal .....	Port Gibson Oil Works .....	Port Gibson, Miss. ....	100	5.00-6.00	.....
Cotton Seed Meal .....	People's C. O. Co. ....	Lafayette, La. ....	100	7.40	8.98
Cotton Seed Meal .....	Planters' Oil Mill .....	Monroe, La. ....	100	6.50	.....
Cotton Seed Meal .....	Red River Oil Co., Ltd. ....	Alexandria, La. ....	100	6.59	8.00
Cotton Seed Meal .....	Red River Oil Co., Ltd. ....	Alexandria, La. ....	100	6.79	8.25
Off Cotton Seed Meal.....	Red River Oil Co., Ltd. ....	Alexandria, La. ....	100	6.17	7.50
Cotton Seed Meal .....	Raccourel C. O. Co. ....	Batchelor, La. ....	100	6.50-7.00	8.00
Cotton Seed Meal .....	Ruston Oil Mills & Fertz. Co. ....	Ruston, La. ....	100	7.00	.....
Cotton Seed Meal .....	H. B. Schrieber & Bro. ....	New Orleans, La. ....			
Off Cotton Seed Meal.....	Capital City Oil Mill Co. ....	Baton Rouge, La. ....	100	6.00-7.00	.....
Prime Cotton Seed Meal..	Standard Guano & Chemical Mfg. C. ....	New Orleans, La. ....	100	4.12-5.76	.....
Cotton Seed Meal .....	Standard Guano & Chemical Mfg. C. ....	New Orleans, La. ....	100	5.76-7.41	.....
Cotton Seed Meal .....	Shreveport Fertz. Co. ....	Shreveport, La. ....	100	4.75	.....
Cotton Seed Meal .....	Sonia C. O. Co., Ltd. ....	Alexandria, La. ....	100	6.59	.....
Cotton Seed Meal .....	Steinhardt & Co. ....	New Orleans, La. ....			
Cotton Seed Meal .....	Dallas C. O. Co. ....	Dallas, Texas .....	100	6.00-7.00	.....
Cotton Seed Meal .....	Steinhardt & Co. ....	New Orleans, La. ....			
Cotton Seed Meal .....	Various Mills .....		100	6.00-7.00	.....
Cotton Seed Meal .....	St. Landry Cotton Oil Co. ....	Opelousas, La. ....	100	6.59	.....
Cotton Seed Meal .....	St. Martin's Oil Works, Ltd. ....	St. Martinsville, La. ....	100	7.00-8.00	.....
Cotton Seed Meal .....	St. Martin's Oil Works, Ltd. ....	St. Martinsville, La. ....			7.00
Cotton Seed Meal .....	Tensas C. O. & Mfg. Co. ....	St. Joseph, La. ....	100	6.00-7.00	.....
Cotton Seed Meal .....	The Union Oil Co. ....	Gretna, La. ....	100	6.59	.....
Cotton Seed Meal .....	The Union Oil Co. ....	Vidalia, La. ....	100	6.59	.....
Cotton Seed Meal .....	The Union Oil Co. ....	Bunkie, La. ....	100	6.59	.....
Cotton Seed Meal .....	The Union Oil Co. ....	West Monroe, La. ....	100	6.59	.....
Cotton Seed Meal .....	The Union Oil Co. ....	Torras, La. ....	100	6.59	.....
Cotton Seed Meal .....	The Union Oil Co. ....	Shreveport, La. ....	100	6.59	.....
Cotton Seed Meal .....	Washington C. O. Co. ....	Washington, La. ....	100-200	6.59	.....



Tabulation showing number of registrations and brands registered by manufacturers of commercial and cotton seed meal fertilizers offering these commodities for sale for use in Louisiana during Season 1903-1904, classified according to registration by manufacturers domiciled in State mentioned below:

STATE—	CLASS.			
	C. S.	M. Fertz.	Com. Fertz.	
	No.	No.	No.	No.
	Mfgs.	Brands.	Mfgs.	Brands.
Alabama .....	...	...	4	41
Arkansas .....	2	2	...	...
Georgia .....	...	...	2	31
Illinois .....	...	...	4	42
Kansas .....	...	...	1	11
Louisiana .....	38	43	12	78
Minnesota .....	...	...	1	11
Missouri .....	...	...	2	12
Mississippi .....	10	10	7	31
Nebraska .....	...	...	3	20
Ohio .....	...	...	1	1
Tennessee .....	2	2	4	49
Texas .....	1	1	2	19
Total number of cotton seed meal registrations .....	53	...	...	...
Total number commercial fertil- izer registrations .....	43	...	43	...
Total number registrations .....	96	...	...	...
Total number brands cotton seed meal registered .....	...	58	...	...
Total number brands commercial fertilizer registered .....	...	346	...	346
Total number brands registered. ...	...	404	...	...

BATON ROUGE, LA., October 1, 1904.

*Mr. Chas. H. O'Rourke, Chief Inspector of Fertilizers, New Orleans, La.:*

DEAR SIR—In compliance with your letter of recent date, I beg to submit my final report for the Season 1903-1904, and I regret that, owing to illness, as also to the large volume of work to be done in my office, my inability to report sooner.

As compared with the work of last season, the tonnage for Baton Rouge District shows a decreased number of inspections, amounting to 135; while the total tonnage shows an increase amounting to 364.59 tons and 3,527 sacks.

The total business for the season amounted to 549 shipments, 14,257.39 tons and 256,330 sacks. Of this total, 87 shipments, 2,610.64 tons and 47,017 sacks were not inspected, owing to the great amount of clerical work included in my duties during the past season in the Board of Agriculture and Immigration office; thus leaving a total number of inspections amounting to 462 shipments, 11,646.75 tons and 209,313 sacks inspected.

Of this lot, 324 inspections, 6,639.95 tons and 132,799 sacks of cotton seed meal fertilizer were inspected by the Sub-Inspectors of Baton Rouge District; while my inspections of this class of fertilizer amounted to:

	Inspections.	Tons.	Sacks.
	21	635.50	12,710
Of the commercial fertilizer.	32	789.30	15,384
Of tankage fertilizer.....	85	3,582.00	48,420
<hr/>			
Making a total of.....	138	5,006.80	76,514

The work for the past season has involved much detail, and in one or two instances, shipments were delayed by the Department, subject to "Thorough investigation." It affords pleasure to be able to state that the evidence adduced in each instance showed clearly there was not intentional desire to violate the law.

Among the improvements that might be made upon the suggestion of the active inspection force throughout the State, I desire to add my suggestion that the present plan of sub-inspections by individuals at the different oil mills, in this District, be done away with and the system be so re-established as to

insure direct inspection of cotton seed meal, both as “a live stock food and a fertilizer” by individual representatives, directly employed by this Department. The addition of commercial food stuffs to the list of commodities requiring our attention and the desire of Commissioner Lee for efficient and accurate service in the work, besides the more substantial business regularity and uniformity that it would obtain—these have prompted me to make this recommendation, and those who have served me faithfully and well as sub-inspectors of this District and have assisted me so materially in the work accomplished during the past two seasons, must not misunderstand this recommendation to reflect upon their work. I make this recommendation, prompted by the knowledge that it is best for the Department for whose welfare and glory we have all labored.

In submitting this report, I desire to thank you and all connected with the work for able and efficient assistance rendered. I desire to extend sincere thanks of this District to the farmers and planters and their managers, as also representatives, the agents of railroad and transportation companies, who have kindly lent their assistance to the work, and trust this letter meets with your approval.

Yours respectfully,

(Signed) MILLARD S. PERKINS.

(Copy.)

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CALHOUN, LA., October 7, 1904.

*Mr. Chas. H. O'Rourke, Chief Inspector of Fertilizers, New Orleans, La.:*

DEAR SIR—In compliance with your request of recent date, beg to submit my final report for Season 1903-1904:

During the season 614 inspections were made, amounting to 14,790.05 tons, 246,811 sacks, as follows:

	Inspections.	Tons.	Sacks.
Cotton Seed Meal Fertilizer—			
Inspected by Sub-Inspectors.	155	4,768.00	92,364
By N. E. Calhoun . . . . .	14	243.80	4,876

## Commercial Fertilizer—

Inspected by Sub-Inspectors.	140	2,905.20	13,324
By N. E. Calhoun .....	205	6,873.05	136,247
Non-inspections (shipments 29) .....	.....	403.00	10,075

Of the 29 non-inspections of commercial fertilizer, seven (7) were of the Shreveport Fertilizer Company's goods and should have been reported to Captain Sellers. The remaining 22 non-inspections were caused in almost every instance by the goods being delayed in transit, and not arriving at destination until after I had made the trip to inspect it, and on account of the enormous amount of work at that season, I could not make a second trip to reach it. In regard to the Sub-inspection Department, I am yet at a loss as to what is best to be done. Though I think after conferring with you and Major Lee in person, we may arrive at some plan by which we can improve the present system. I am fully aware that, at least, a part of our sub-inspection system is not best for all concerned. Especially do I refer to those sub-inspectors who are in any way connected with the oil mills. Inasmuch as results, by use of commercial fertilizers, in North Louisiana, during this season, have been satisfactory, the indications are for a large increase another season. Also the inspection of commercial feed stuffs will necessitate more work for the Inspectors. Therefore, I am persuaded that a change of the sub-inspectors will be to the best interest of the Department.

In conclusion I desire to thank you for the assistance rendered me during the season and assure you that I shall put forth every effort to reach the highest standard of perfection in the Inspection Department.

With best wishes, I am very cordially,

(Signed) N. E. CALHOUN,

Calhoun District.

Inspector.

(Copy.)

MURPHY P. O. LA., October 7, 1904.

To Mr. Chas. H. O'Rourke, Chief Inspector Fertilizers, No. 714  
Union Street, Main Office, New Orleans.

DEAR SIR—There were 312 inspections and 10 non-inspections made in this, the Terrebonne District, Season 1903-1904.

	Inspections.	Tons.	Sacks.
Cotton Seed Meal Fertilizer—			
Inspections by sub-inspectors	115	3,619.10	71,382
Inspections by myself .....	34	1,476.00	29,760
Non-inspections, 5 inspections .....	155	.....	3,100
	149	5,197.10	10,142
Commercial Tankage—			
Inspected by myself .....	13	286.00	4,820
Non-inspections by myself, 3 inspections .....	....	50.00	1,000
Tankage—			
Inspected by myself .....	150	5,529.10	67,693
Non-inspections by myself, 2 inspections .....	....	50.00	599
Non-inspections, 10 .....	....	255.00	46,995
Inspections .....	312	10,912.20	173,665

The work in this District has not been quite as hard as previous years, and I think now that we have a road running from Franklin to Abbeville and another running from Raceland on Bayou Lafourche to Lockport, it will facilitate traveling very much in moving rapidly through the country—especially in bad weather.

There is one thing I would call your attention to, and that is the present mode of inspecting cotton seed meal fertilizers. The planters want the inspections made on the plantations—I have heard several complaints. There is another trouble about inspecting at mills that causes some confusion in my District. The planter gets his consignment before he gets any notice of inspection or his analysis, and he at once calls up by telephone District Inspector or forwards sample to State Chemist. Where meal is shipped from outside of District it is difficult for District Inspector to know whether it has been inspected or not. Had it not been for the promptness on part of the planters in notifying me of arrival of meal, several lots would not have been inspected, as there was no notification of shipment. Too much cannot be



said in favor of the planters in Terrebonne District for their uniform assistance in inspecting fertilizers and kindness in every way.

The officers of the Southern Pacific Railroad and Teeche Line boats have rendered me every assistance possible in their power.

With many kind wishes, your friend,

(Signed) J. C. MURPHY.

(Copy.)

From this report of tonnage you will readily see from the evidence of increased business, that the Inspection Department of the State Board of Agriculture and Immigration has reached proportions that place it prominently upon a higher plane of responsibility and has brought within its scope the important duty of not only controlling the legitimate commerce in fertilizers and Paris Green, in the expansion and development of a field that has made remarkable strides in the past four years, but also embraces the supervision of feed stuffs in accordance with the requirements of Act 153 of 1904 under your guidance and direction.

Tabulation showing actual tonnage covered by reports (both inspection and non-inspection reports), but not including sub-inspection department. Tonnage for Seasons 1902-1903, 1903-1904, of Inspection Department throughout its entire system for the Seasons 1900-1901, 1901-1902, 1902-1903 and 1903-1904.

District—	Season 1900-1901.		Season 1901-1902.	
	Reports.	Tons.	Reports.	Tons.
Baton Rouge .....	104	5,243.86	117	7,127.50
Calhoun .....	229	2,768.15	325	4,780.98
Leesville .....	25	335.75	101	1,401.00
Terrebonne .....	243	8,017.56	228	7,775.98
New Orleans .....	1,793	27,193.07	2,057	28,118.96
	<hr/>	<hr/>	<hr/>	<hr/>
	2,394	43,558.39	2,888	49,204.42

District—	Season 1902-1903.		Season 1903-1904.	
	Reports.	Tons.	Reports.	Tons.
Baton Rouge .....	262	7,823.10	225	7,617.44
Calhoun .....	323	4,339.50	348	7,519.85

Leesville .....	100	1,363.05	254	3,380.20
Terrebonne .....	222	8,649.10	207	7,548.10
New Orleans .....	4,061	45,709.50	3,306	37,117.72
	<hr/>	<hr/>	<hr/>	<hr/>
	4,968	67,884.25	4,340	63,183.31

Tabulation showing actual tonnage covered by reports of sub-inspection department, Seasons 1902-1903 and 1903-1904.

District—	Season 1902-1903.		Season 1903-1904.	
	Reports.	Tons.	Reports.	Tons.
Baton Rouge .....	335	6,069.70	324	6,639.95
Calhoun .....	212	4,163.10	295	7,673.20
Terrebonne .....	124	3,715.25	115	3,619.10
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	671	13,948.05	594	15,027.05

Commercial Fertilizers—140 inspections, 2,905.20 tons, 13,724 sacks.

#### GENERAL RECAPITULATION.

District—	Season 1900-1901.		Season 1901-1902.	
	Reports.	Tons.	Reports.	Tons.
Baton Rouge .....	104	5,243.86	177	7,127.50
Calhoun .....	229	2,768.15	325	4,780.98
Leesville .....	25	335.75	101	1,401.00
Terrebonne .....	243	8,017.56	228	7,775.98
New Orleans .....	1,793	27,193.07	2,057	28,118.96
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	2,394	43,558.39	2,888	49,204.42

District—	Season 1902-1903.		Season 1903-1904.	
	Reports.	Tons.	Reports.	Tons.
Baton Rouge .....	597	13,892.80	549	14,257.39
Calhoun .....	535	8,502.60	643	15,193.05
Leesville .....	100	1,363.05	250	3,356.20
Terrebonne .....	346	12,364.35	322	11,167.20
New Orleans .....	2,483	31,799.80	3,306	37,117.72
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	4,061	67,922.60	5,070	81,091.56

# ACT No. 174.

BY MR. SMITH, OF RAPIDES.

House Bill No. 306.

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## AN ACT

To protect and advance agriculture by regulating the sale and purity of Paris Green used as an insecticide; by establishing the guarantees and conditions upon which it is to be sold, and by fixing the penalties incurred by violation of such conditions; by providing for its inspection and analysis, and establishing the liability of the seller to the purchaser, when the analysis falls below the guarantee given; by providing for the collection of the money and the disposition thereof. And to repeal all laws in conflict with or inconsistent with this act.

SECTION 1. Be it enacted by the General Assembly of the State of Louisiana, That the Louisiana State Board of Agriculture and Immigration shall be charged with the duties of regulating the sale and purity of Paris Green used as an insecticide in this State.

SEC. 2. Be it further enacted, etc., That it shall be the duty of the Louisiana State Board of Agriculture and Immigration, or its Commissioner, at the opening of each season to issue and distribute circulars setting forth the brands of Paris Green and their percentage of arsenic as claimed by the dealers, and to more particularly describe them they shall be separated into two classes, viz:

Those brands containing fifty per cent or more of arsenic shall be classed as "strictly pure;" and, second, all falling below this percentage shall be classed as "impure."

SEC. 3. Be it further enacted, etc., That it shall be the duty of the Commissioner of Agriculture and Immigration to cause to be prepared "labels" of suitable material, fit to be attached to packages of Paris Green, and to have printed thereon the word, "Guaranteed," with a blank space into which may be stamped by

the Commissioner of Agriculture and Immigration the words, "Strictly pure," or "Impure," as the guarantee may require; also the year or season in which the same are to be used, and a fac-simile of the signature of said Commissioner. The said labels shall be furnished by the said Commissioner to any dealer in Paris Green who shall have complied with the provisions of this act upon payment by the said dealer to the said Commissioner of fifty cents for a sufficient number to label one hundred pounds of said Paris Green. All Paris Green carried over in stock from one year to another by merchants and dealers shall be re-stamped at the commencement of each year, which is hereby set as May 1st, and such stock so carried over shall be re-stamped at the expense of such merchant or dealer at the rate of one-half cent per pound, and shall be subject to all requirements of this act. All merchants and dealers having stock on hand on April 30th of each year are hereby required to notify the Chief Inspector of Fertilizers of the quantity of Paris Green they have on hand, the quantity of Paris Green purchased since May 1st of the previous year, itemizing each shipment according to date, number of pounds, number of packages, and stating plainly from whom each shipment is purchased, and said statement shall be made under oath.

SEC. 4. Be it further enacted, etc., That it shall be the duty of every person before offering for sale any Paris Green as an insecticide in this State to attach or cause to be attached to each package one of the labels hereinbefore described, designating the quantity of Paris Green in the package to which it is attached. Any person who shall counterfeit or use a counterfeit of the label prescribed by this act, or shall use them a second time, shall be guilty of a misdemeanor, and on conviction thereof shall be fined in a sum not exceeding two hundred and fifty dollars; one half of which shall be paid to the informer, which fine may be doubled or trebled at each second or third conviction, and so on progressively for subsequent convictions.

SEC. 5. Be it further enacted, etc., That any person manufacturing, dealing in, selling or soliciting orders in the State of Louisiana for the sale of Paris Green, shall, when he has agreed to sell any lot of Paris Green, notify in writing the Chief State



Inspector of Fertilizers of the sale, the name of manufacturer, the number of pounds, and the number of packages in the lot sold, and the names of the seller and purchaser, and the location and situation of the lot of Paris Green so sold; and when so notified the Inspector of Fertilizers shall proceed to sample said lot and shall forward to the State Chemist such sample for analysis, and the vendor shall not ship or deliver the lot or lots sold to the purchaser until such Inspector has made such inspection; *provided*, that in the event the inspection before shipment or delivery to the purchaser be found to be impracticable; then said inspection shall be made immediately after actual delivery to the purchaser, or so soon thereafter as practicable under the circumstances. Any person who has qualified according to the requirements of this act to deal in Paris Green, and who fails to notify the Chief Inspector of Fertilizers of any shipment of Paris Green which they or their agents make to a point in Louisiana, shall be liable for each violation to a fine not exceeding twenty-five dollars (\$25.00), which fine shall be recoverable before any court of competent jurisdiction, at the suit of the Commissioner, without bond or advance cost, and shall revert to the Paris Green fund; five violations of this nature shall be sufficient cause for the revocation of any Paris Green license issued by the Commissioner of Agriculture and Immigration. Any person who shall sell any package of Paris Green which has not been stamped as herein provided shall be guilty of a misdemeanor, and on conviction thereof shall be fined the sum of two hundred and fifty dollars (\$250.00) for each lot of Paris Green so sold, and the said person shall be liable, besides, to a penalty of five dollars (\$5.00) for each omission to stamp each package, and each omission to constitute a separate offense, which penalty may be sued for either by the Commissioner or any other person, and shall revert to the Paris Green fund. It being understood that this provision applies to any lot of Paris Green not sufficiently stamped to cover the total number of pounds in any one shipment. And it shall be the duty of the Attorney General and of the several District Attorneys, when requested by the Commissioner, to enjoin any person, firm or corporation, resident or non-resident,



from manufacturing or selling or soliciting orders for the sale of Paris Green for use in this State without complying with all the provisions of this act without bond or advance cost. That the Commissioner shall have a privilege on any Paris Green sold in this State in violation and contravention of the provisions of this act, and may proceed by writ of provisional seizure against Paris Green so sold, in the hands of whomsoever the same may be, and wheresoever he may find the same, regardless of the domicile of the owner thereof, to recover the fines and penalties due for the legal sale thereof, by presenting a petition to a competent judge or magistrate within whose jurisdiction said Paris Green is found, stating on oath at the foot of the petition the amount and nature of the demand, the Paris Green on which the privilege exists, praying that the Paris Green be seized to satisfy the claim and pay the costs of suit, and thereafter the proceedings in said suit or suits shall be conducted in the manner provided for in Articles two hundred and ninety-two (292), two hundred and ninety-three (293), two hundred and ninety-four (294) and two hundred and ninety-five (295) of the Code of Practice, all of which are hereby made applicable to the proceedings herein provided for; *provided*, that if there be judgment in favor of plaintiff in such suits, with privilege on the Paris Green, and the same be ordered to be sold to satisfy such judgment, the Commissioner shall, prior to the sale, draw proper sample from said Paris Green, and cause the same to be analyzed by the official Chemist, and shall affix to the package thereof the guarantee stamps as required by this act, so that the purchaser at the sheriff's or constable's sale may purchase the said Paris Green under a full guarantee, as provided for in this act.

SEC. 6. Be it further enacted, etc., That no fraudulent Paris Green shall be sold for use in this State, that the price of fraudulent Paris Green shall not be collected by any process of law; that no person buying fraudulent Paris Green in this State, or sold for use in this State, shall be bound in any manner to pay the price or cost thereof; that all Paris Green sold in this State or for use in this State without having been inspected or stamped, as provided for in this act, shall be conclusively presumed to be

fraudulent Paris Green, within the meaning of this prohibitive law, the price of which shall not be collected, and all notes, contracts and obligations based on the sale thereof shall be null and void.

SEC. 7. Be it further enacted, etc., That the copy of the official Chemists' analysis of any Paris Green certified to by him shall be admissible as evidence in any court of the State on trial of any issue involving the merits of said Paris Green.

SEC. 8. Be it further enacted, etc., That it shall be the duty of any manufacturer or dealer in original packages of Paris Green before the same is offered for sale in this State, to submit to the Commissioner of Agriculture a written or printed statement, setting forth: First, the brands of Paris Green to be sold; the number of pounds contained in each package in which it is to be put upon the market for sale, and the name or names of the manufacturer and the place of manufacture. Second, the statement setting forth the amount of arsenic which they are willing to guarantee the said Paris Green to contain, and the statement so printed shall be considered as constituting a guarantee to the purchaser that every package of such Paris Green contains not less than the amount of arsenic set forth in the statement.

SEC. 9. Be it further enacted, etc., That every person proposing to deal in Paris Green shall, after filing the statement provided for with the Commissioner of Agriculture and Immigration, receive from the said Commissioner of Agriculture a certificate stating that he has complied with the foregoing section, which certificate shall be furnished by the Commissioner without any charge therefor. That said certificate, when furnished, shall authorize the party receiving the same to deal in this State in Paris Green; that no person who has failed to file the statement aforesaid, and to receive the certificate of authority aforesaid, shall be authorized to deal in this State in Paris Green, and any person so dealing in this State without having filed the aforesaid statement and received the certificate aforesaid, shall be liable, for each violation, to a fine not exceeding two hundred and fifty dollars, which fine shall be recoverable before any court of competent jurisdiction at the suit of the Commissioner of Agriculture

and Immigration, or any citizen, and shall be disposed of as hereinafter provided; and *provided further*, that nothing in this section shall be construed as preventing the sale by retail merchants and dealers throughout the State of Paris Green which has already been guaranteed and labeled for the season in and for which the same was purchased, as provided for in this act, and provided the same be not carried over in stock from one year to another in the manner set forth in Section 3 of this act.

SEC. 10. Be it further enacted, etc., That the Bureau of Agriculture and Immigration shall adopt needful rules and regulations providing for the collection of the money arising from the sale of labels, or from any fines imposed under this act, and shall deposit same with the Treasurer of the State, and the funds so constituted shall be drawn therefrom upon warrants issued by the Auditor of the State upon the requisition of the Commissioner of Agriculture and Immigration, made in pursuance of such rules and regulations. All sums of money arising from the provisions of this act shall be known as the "Paris Green Fund," and shall be kept by the Treasurer separate from other public funds, and shall be used to defray expenses and costs of labels, inspections and analysis.

SEC. 11. Be it further enacted, etc., That the Commissioner of Agriculture shall keep a correct and faithful account of all labels received and sold by him, and the amount of money collected therefor, and all money arising from fines under this act.

SEC. 12. Be it further enacted, etc., That all laws or parts of laws in conflict or inconsistent with the provisions of this act be and they are hereby repealed.

R. H. SNYDER,

*Speaker of the House of Representatives.*

P. M. LAMBREMONT,

*President Pro Tempore of the Senate.*

Approved July 6, A. D. 1904.

NEWTON C. BLANCHARD,

*Governor of the State of Louisiana.*

A true copy:

JOHN T. MICHEL,

*Secretary of State.*